PRIVACY AND SECURITY IN THE CLINICAL AUDIOLOGY SETTING: OHIO AUDIOLOGISTS' KNOWLEDGE OF THE HEALTH INSURANCE PORTABILITY AND ACCOUNTABILITY ACT

Capstone Project

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Audiology in the Graduate School of The Ohio State University

By

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2016

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Abstract

The purpose of this study was to investigate the knowledge possessed by professionally licensed audiologists regarding the Health Insurance Portability and Accountability Act of 1996 (HIPAA) and its implications for clinical audiological practices. The study also aimed to examine the training and enforcement of HIPAA regulations in audiology clinics and facilities. A 30-question survey was distributed to professionally licensed audiologists in Ohio via an online survey instrument. The survey focused on audiologists' knowledge of HIPAA regulations as well as corresponding sources of education and training. Subsequently, six pre-generated discussion questions were electronically distributed to Ohio audiologists. The discussion questions focused on the HIPAA training and education provided to audiologists in their employment settings.

The results of the study indicated that audiologists possess limited knowledge regarding HIPAA regulations and that the majority of audiologists currently receive annual training and education through electronic sources. The results of the current study demonstrate the need for enhanced HIPAA training strategies in educating audiologists regarding the importance of federal privacy and security regulations as well as compliance with them.

Dedication

This capstone project is dedicated, first and foremost, to the most influential and supportive people in my life – my parents, John and Maureen; my sister, Mary Grace; and my unconditionally loving grandparents. Additionally, this project is dedicated to my academic professors, clinical supervisors, and fellow classmates who have provided me with endless encouragement and guidance along the way. Lastly, this document is devoted to the memory of my late Grandpa Hurley, who will always serve as an incredible role model of perseverance, compassion, and what it means to simply do the right thing.

Acknowledgements

I would like to extend my sincere gratitude to my capstone advisor, Dr. Gail M. Whitelaw, for her unwavering support, commitment, and patience during this process. I would also like to extend my heartfelt thanks to the other members of my capstone committee, Dr. Julie Hazelbaker and Dr. Christina Roup, for their invaluable wisdom and support. The contributions of my committee members have been critical to the completion of this project and I cannot thank them enough.

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Chapter 1

Introduction

As established and enforced by the United States Department of Health and Human Services (HHS) Office for Civil Rights (OCR), the Health Insurance Portability and Accountability Act (HIPAA) of 1996 is a federal statute that was created to improve both individual and group access to and continuity of health insurance coverage (HIPAA, 1996). It also aimed to reduce the exploitation or misuse of health insurance, health information, and health care services. Furthermore, HIPAA was intended to endorse the utilization of medical savings accounts, protect the privacy and ensure the security of health information, regulate the exchange of electronic heath care information, and simplify the distribution and management of health insurance. According to Li and Shaw (2008), it is the "largest governmental law in healthcare since Medicare" (p. 45); thus, the HIPAA, and its subsequent modifications, have, undoubtedly, revolutionized healthcare services in the United States.

Also known as Public Law 104-191, it was enacted by the United States Congress in 1996 and its regulations apply to the following covered entities: health plans, healthcare clearinghouses, and healthcare providers. As a federal law, HIPAA rules, regulations, and requirements set a national healthcare standard for covered entities that supersedes state law standards, unless the applicable state law regulating individually

identifiable health information and the privacy of health information is more strict that the statute described by HIPAA. In this case, the covered entity must adhere to the more stringent state law as well as the rules established by HIPAA (45 CFR 160.203; 45 CFR 160.203[b]).

HIPAA is comprised of five provisions/titles, including: (I) Health Care Access, Portability, and Renewability, (II) Preventing Health Care Fraud and Abuse; Administrative Simplification; Medical Liability Reform, (III) Tax-Related Health Provisions, (IV) Application and Enforcement of Group Health Plan Requirements, and (V) Revenue Offsets (HIPAA, 1996). Title II provides national standards for electronic health care transactions as well as the protection of an individual's health information. Title II contains the Privacy and Security Rules, both of which took effect in April 2003, and play the most significant, relevant role for healthcare providers, including audiologists, in the delivery of healthcare services (Lo, Dornbrand, & Dubler, 2005; Shaw, 2013).

The Privacy Rule has created a set of national standards that focuses on the use and disclosure of protected health information (PHI) by covered entities and aims to help ensure that the privacy rights of individuals are honored and upheld. Furthermore, the Privacy Rule aims to increase and improve individuals' knowledge and control regarding the utilization and disclosure of their PHI by covered entities (45 CFR 160; The Office of the National Coordinator for Health Information Technology (ONC), 2012). The Security

Rule has created a set of national standards to safeguard the electronic generation, storage, use, and transmission of PHI. The Security Rule demands the implementation of administrative, physical, and technical safeguards to ensure that electronic PHI (e-PHI) is utilized appropriately while remaining confidential. Together, the Privacy and Security Rules set clear federal statues for the use and transmission of PHI that must be carefully understand and strictly adhered to by covered entities, including audiologists, in order to maintain the delivery of appropriate healthcare services.

Audiologists are educated, trained, and professionally licensed to administer comprehensive peripheral or central auditory and vestibular assessments, identify, diagnosis, and manage audiological and vestibular disorders, and provide appropriate correlating rehabilitative services (American Academy of Audiology, 2009). Audiologists are also responsible for the assessment and fitting of hearing instruments, hearing assistive technology (HAT), and assistive listening devices (ALDs). Furthermore, they provide routine maintenance, troubleshooting, and follow-up associated with the utilization of hearing instrumentation (AAA, 2009). Classified as a covered entity under HIPAA, clinical audiologists are healthcare professionals who provide the delivery of audiological and vestibular services to a wide range of patient populations, ranging from newborn babies to older adults. Ensuring both the privacy and security of patients' PHI is essential to providing confidential audiological or vestibular services that uphold the federal (as well as potential state) rights of each individual.

In order to comply with the Privacy and Security Rules established by HIPAA, audiologists must have a strong understanding of what constitutes PHI as well as e-PHI. PHI refers to individually identifiable health information that is produced, transferred, or maintained in any (written, oral, electronic), whereas e-PHI refers specifically to a subset of PHI that is documented and stored in electronic media. PHI pertains to the patient's past, present, or future physical or mental health status, as well as the provision of healthcare to the individual and his or her past, present, or future payment for the provision of health care (ONC, 2012). PHI may include the patient's name, social security number, date of birth, tattoos or other personally identifiable piercings or markings, and license plate number, to name a few. Failure to comply with the Privacy and Security Rules, as well as all other federal statutes described by HIPAA, is both unethical and illegal. Failure to comply with HIPAA regulations can result in civil and/or criminal penalties, which may include monetary fines and/or imprisonment (ONC, 2012).

Audiologists' understanding of and compliance with HIPAA statutes is crucial to maintaining the privacy, security, and confidentiality of patient's PHI as well to operating a lawfully- and ethically-based clinical practice. Both intentional and unintentional violations of HIPAA rules and regulations can have significant implications for the patient and the audiologist. Deliberate compromises of patient's PHI, by healthcare professionals, can certainly occur. More often, however, unintentional violations of

HIPAA statues result from clinical and/or operational oversights or mistakes, as well as ignorance or misunderstanding of the federal rules and regulations (Sterling, 2015). Therefore, it is essential that audiologists receive appropriate education and training regarding HIPAA federal statues prior to their interaction with patients, and that this education is continued and evaluated on a periodic basis. Changes to the regulations established by HIPAA must also be understood and adhered to in order to ensure that patients' information remains protected and secure.

Recent legislation, including the Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009, features modifications to HIPAA that have a direct impact on the health care services provided by audiologists (Romanow, 2010; Shaw, 2013). Enacted as a part of the American Recovery and Reinvestment Act of 2009, HITECH established additional regulations regarding the privacy and security of PHI as they relate to electronic healthcare transactions (Jones, Swain, Patel, & Furukawa, 2014). As such, HITECH regulations focus specifically on health information that is stored, transmitted, and exchanged electronically using encryption technology and electronic medical record systems. One of the most prominent regulations established by HITECH centers upon the notification requirements associated with breaches of unencrypted PHI (Grossman, 2014). The majority of clinical audiologists are employed in healthcare settings and facilities that utilize electronic medical records for the documentation of assessment, diagnostic, and rehabilitative audiological and vestibular services. As such,

the provisions outlined by HITECH are highly relevant to the practice of audiology, and highlight the need for continuing education and training regarding the privacy and security of PHI in clinical audiological environments.

Examination of audiologists' current understanding of the federal statutes established by HIPAA, and subsequent modifications, as well as the sources of information and training they receive, is essential to developing and implementing improved educational programs. The purpose of this study was to investigate the knowledge possessed by professionally licensed audiologists regarding HIPAA and its implications for clinical audiological practices. The study specifically examined audiologists' knowledge and understanding of the federal rules, regulations, and requirements designed to ensure the privacy and security of patients' health information. Once audiologists' knowledge of HIPAA privacy and security regulations was established, the final objective of this study was to identify the current HIPAA training and/or educational methods that are utilized in clinical audiological facilities. Identification and examination of currently utilized HIPAA training and/or educational methods allowed for the proposition of various strategies to improve and enhance HIPAA training efforts in clinical audiological facilities.

The following questions served as the main objectives of the study:

1. What knowledge do professionally licensed audiologists possess regarding the rules, regulations, and requirements established by HIPAA?

2. What sources of education and training do audiologists receive regarding the implementation of and adherence to HIPAA regulations and requirements?
3. What strategies and methods can be developed to increase audiologists' knowledge and understanding of HIPAA statutes and regulations?

Chapter 2

Literature Review

The need for increased examination and documentation of the knowledge possessed by professionally licensed audiologists regarding the federal regulations established by HIPAA and, subsequently, the Health Information Technology for Economic and Clinical Health Act (HITECH) of 2009 in highlighted in the literature on this topic. The regulations established by HIPAA are designed to ensure the privacy and security of patients' health information, while HITECH statutes focus specifically on the security of electronically transmitted health information (Dunlap and Frigy, 2013). The knowledge and understanding possessed by clinical audiologists regarding HIPAA regulations is scarcely documented in the literature, thus emphasizing the need for increased research and further investigation into the areas of privacy and security in healthcare settings. Additionally, little research has been dedicated to the training strategies that are utilized in healthcare facilities regarding HIPAA and HITECH statutes. Thus, in order to improve and strengthen the educational techniques that are employed in clinical audiological settings, an investigation into current training methods and their effectiveness and/or limitations is required.

Understanding of and adherence to federal privacy and security regulations plays a critical role in the protection of patients' health information and privacy during the provision of assessment, diagnostic, and rehabilitative healthcare services. As such, an

exploration of audiologists' understanding of the privacy and security statutes established by HIPAA and HITECH is essential to improving and bolstering the HIPAA educational strategies that are employed in clinical audiological facilities. Thorough understanding and proper implementation of HIPAA and HITECH statutes is the responsibility of all healthcare providers and support staff who are involved in administering direct, as well as indirect, health care services (Bendix, 2013). In order to foster and sustain clinical audiological environments which strongly emphasize the protection of patients' health information, the importance of HIPAA and HITECH regulations, as well as their implications for patients' privacy and security, must be emphasized to audiologists on a routine basis.

Originally enacted in 1996, HIPAA was established to amend the Internal Revenue Code of 1986 (Federal Register, 2003). Enacted by the Senate and House of Representatives of the 104th Congress, it contains five titles that focus largely on improving individuals' access to and continuity of health insurance coverage as well as decreasing the exploitation and mishandling of health care services. Following the enactment of HIPAA, HITECH was later established to further bolster the security of electronically documented, stored, and transmitted health information (Romanow, 2010). Subsequently, on January 25th, 2013, the HIPAA Final Omnibus Rule was officially published (Dunlap and Frigy, 2013). The primary function of the HIPAA Final Omnibus Rule centers upon enforcement, policy, and education regarding privacy and security of

healthcare information (Strauss, 2013). According to Strauss (2013), the Final Omnibus Rule requires that the enforcement of HIPAA regulations be addressed from a proactive, as opposed to a reactive, approach. Furthermore, in accordance with the Final Omnibus Rule, breaches of HIPAA regulations now carry increased civil monetary penalties and "tiered levels of culpability" (Strauss, 2013, p. 61). Thus, the HIPAA Final Omnibus Rule aims to improve the privacy and security surrounding patients' PHI and increase the stringency of penalties for breaches or unauthorized disclosures of such information.

One of the most prominent modifications associated with the enactment of the Final Omnibus Rule surrounds the required procedures following breaches of PHI (Dunlap and Frigy, 2013; Strauss, 2013). Covered entities, including healthcare providers, must adhere to established regulations regarding notifications and reporting of breaches when unlawful disclosures of PHI occur. Covered entities are required to notify affected individuals when breaches of unencrypted PHI occur (Dunlap and Frigy, 2013). However, if the PHI was encrypted, breach notifications are not required. If a breach of unencrypted PHI occurs, the covered entity must notify affected individuals "without reasonable delay" and within 60 days of its discovery (Romanow, 2010, p. 3). By establishing more concrete, specific breach notification requirements, the Final Omnibus Rule reduces the subjectivity and confusion associated with prior breach notification obligations and, instead, increases uniformity amongst covered entities.

Title II of HIPAA, entitled Administration Simplification, features the most pertinent and relevant standards for healthcare providers, as it encompasses both the privacy and security regulations surrounding PHI (Brown, 2005). Title II outlines the *Standards for Privacy of Individually Identifiable Information* as well as the *Health Insurance Reform: Security Standards Rule*, which are also commonly referred to as the "Privacy Rule" and "Security Rule," respectively (Federal Register, 2003). Collectively, the Privacy and Security Rules establish regulations to safeguard the collection, transmission, and exchange of PHI. Compliance with the Privacy and Security Rules is critical to the protection and safeguarding of patients' information, thus highlighting the need for comprehensive educational and training programs in clinical healthcare facilities.

Audiologists' knowledge and understanding of HIPAA and HITECH regulations, particularly those surrounding the Privacy and Security Rules, plays a crucial role in their interactions with patients as well as their documentation, use, and disclosure of patients' PHI. As healthcare providers, audiologists are considered a cover entity under HIPAA and thus must abide by corresponding federal statutes and regulations (Denton and Gladstone, 2005). Thus, in order to provide and deliver audiological services, as well as interact with patients, in a HIPAA compliant manner, audiologists must be properly trained and educated regarding federal privacy and security regulations. Training regarding HIPAA statutes is mandated in all clinical healthcare facilities upon hiring or

during the new employee orientation period (Lo et al., 2005). Requiring audiologists to complete HIPAA training and/or coursework prior to their interactions to patients highlights the importance and significance of these federal regulations. Furthermore, it provides them with the foundation necessary to safeguard patients' health information.

In order to ensure successful implementation of and adherence to HIPAA privacy and security regulations, establishment and utilization of a HIPAA program is highly recommended in all clinical healthcare facilities. According to Brown (2005), development of a HIPAA program that focuses specifically on privacy and security regulations is essential for healthcare facilities because these statutes contain substantial for healthcare providers (p. 10). Successful design and implementation of a HIPAA privacy and security educational program is largely dependent upon the support it receives from executive staff members in the healthcare facility. Executive staff members should work closely with the facility's designated Chief Privacy Officer (CPO) and Chief Security Officer (CSO) in order to develop a program that emphasizes the importance of HIPAA statutes and illustrates the potential repercussions for violations of these regulations (Brown, 2005). In developing a HIPAA program, a clear outline of the federal statutes, as well as their implications for clinical practice and patient interactions, is essential to increasing compliance and reducing unlawful disclosures of PHI.

Once a HIPAA training program has been developed, the designated Privacy and Security Officers can initiate implementation of the program with healthcare providers in

the facility (Brown, 2005). In some cases, the designated Privacy Officer and Security Officer may be the same person and, thus, comprehensively titled the Compliance Officer (Jacob, 2003). Communication and collaboration with other professionals who are involved in ensuring the privacy and security of patients' PHI is also critical to developing an effective HIPAA program (Lo et al., 2005). Such professionals may include patient representatives, risk managers, and the facility's legal representation. According to Brown (2005), key components to a successful program include both education and a clear outline of each employee's role in protecting patient's health information. As the literature demonstrates, employee training is the most important and influential factor in increasing HIPAA compliance and reducing negligence, as well as violations, associated with federal privacy and security statutes (Brown, 2005; Bendix, 2013; Lewis, 2013). Emphasizing the importance of each employee's commitment and contribution to protecting patients' health information allows them to gain a better understanding of the impact of their practices and decisions on patients' privacy. In doing so, healthcare providers become increasingly aware of one simple fact: adherence to and compliance with HIPAA regulations is everyone's responsibility.

Training regarding HIPAA privacy and security statutes must include a clear explanation of PHI, as well as examples of what is considered PHI. Examples include, but are not limited to, names, full-face images, social security numbers, and medical record numbers (Lewis, 2013). Audiology-specific examples of PHI primarily include

audiograms, ear impressions, and documents related to the assessment and rehabilitation of auditory and vestibular impairments (Jacob, 2002). During training and educational programs, authorized disclosures of PHI should be highlighted and described as well. Disclosures of PHI are permitted for the purposes of payment, treatment, and healthcare operations (Jacob, 2002). Disclosures of PHI are prohibited in all other circumstances; thus, the differentiation between permissible and wrongful disclosures should be emphasized to all healthcare providers.

In addition to providing information regarding PHI, training must also cover security measures in the facility, such as log in monitoring and audit logs, safeguarding against viral software, and use of password protection (Johnson and Schulte, 2004). According to Li and Shaw (2008), access to electronic medical records can be most effectively controlled using credentialed data access and authentication. Credentialed data access limits access to patient information on a need-to-know basis. Restricting access to only those professionals who are required to view the sensitive information for the purpose of providing healthcare services reduces inappropriate or unnecessary access of confidential data (Li and Shaw, 2008). Authentication, on the other hand, requires the use of a username and password for computer and program access (Li and Shaw, 2008). Furthermore, it may also include the use of a fingerprinting system, hardware token, or access cards. Education regarding PHI and associated privacy and security regulations is

essential to expanding providers' knowledge, increasing their compliance, and reducing the misuse or abuse of patients' health information.

Facility-wide education regarding HIPAA regulations should be supported by the implementation of regular departmental training as well. Typically, facility-wide educational methods provide an overview of HIPAA statues and their implications for clinical practice (Brown, 2005). Thus, departmental training efforts should also be employed in order to outline specific examples, provide clarification, and answer questions regarding department-specific applications of HIPAA statues. Departmental training efforts play an important role in facilitating healthcare providers' understanding of the application of HIPAA regulations to their individual professions (Jacob, 2002). Furthermore, it clarifies providers' responsibilities and holds them accountable for their clinical practices as they relate to the use, storage, and transmission of patients' PHI.

HIPAA training and education can be accomplished using a variety of methods, such as written, in-person, or computer-based forms. Use of a combination of these methods may be desired as well. Regardless of the educational methods that are employed, providers' knowledge and understanding of HIPAA regulations should be assessed at the conclusion of training programs (Bendix, 2013). Evaluating providers' knowledge and retention of HIPPA statutes provides verification of their participation in the training program as well as their comprehension of the regulations (Lesiecki, 2003). Additionally, it allows those who have designed and implemented the training programs

to better determine the educational strategies that are most effective versus those that need improvement or modification (Brown, 2005).

The assessment of providers' understanding of HIPAA statues may be accomplished by requiring completion of a formal quiz or test (Brown, 2005; Bendix, 2013). In order to fulfill the requirements of the training program, providers must often earn a pre-determined passing score on the final quiz or test. Once providers have earned a passing score, the results can be added to their employee file, thus verifying their successful participation in and completion of the HIPAA training program (Bendix, 2013). Though evidence of a passing score certainly does not guarantee a concrete understanding of HIPAA regulations, it can help in facilitating increased feelings of responsibility and accountability regarding compliance with privacy and security regulations. Additionally, healthcare providers should be given the opportunity to provide feedback regarding strengths and weaknesses of the training program, as well as suggestions for improvement. Gaining feedback from providers is necessary for assessing the effectiveness of the training program, and plays an important role in enhancing the program over time.

The development of an effective HIPAA educational program is essential to guarding PHI and ensuring appropriate access to patient data. Often, HIPAA violations and breaches of PHI result from ignorance or misunderstanding of the regulations, lack of adequate training, and/or incidental disclosures of sensitive information (Lo et al., 2005).

According to Sanna (2014), common violations of HIPAA privacy and security regulations include: (1) unauthorized viewing of PHI, (2) lack of patient access to PHI, (3) failure to provide patients with a Notice of Privacy Practices (NPP), (4) inappropriate utilization of the Internet, (5) mishandling of written records, and (6) being overheard discussing PHI. As one of the most common violations, unauthorized viewing of PHI often does not occur intentionally. Instead, it may occur by simply accidentally selecting the wrong chart or note from the patient's electronic medical record (Sanna, 2014). Breaches of HIPAA regulations are punishable by civil and criminal consequences, even if they are unintentional. Thus, the routine monitoring of providers' accessing of patient documents must be emphasized to them during training.

In accordance with HIPAA regulations, if requested, patients must be granted access to their medical records (Sanna, 2014). Use of a patient portal, via a secure Internet website, facilitates easy retrieval of electronic medical records and can be safely accessed using an assigned username and corresponding password. While the majority of patients are familiar with general privacy and security rules, many of them are not well versed in the specific requirements established by HIPAA. Thus, in accordance with the HIPAA Omnibus Rule, patients must be provided with a written explanation of the healthcare facility's privacy practices prior to their initial visit (Sanna, 2014). The NPP describes patients' privacy and security rights with respect to their PHI. It requires patients to sign an "Acknowledgement of Receipt or Refusal of Notice" prior to the

administration of any healthcare services (Sanna, 2014). Informing patients of their privacy and security rights, along with corresponding federal privacy practices, leads to increased transparency and greater self-advocacy abilities. As such, adherence to these HIPAA regulations must remain a high priority for all healthcare providers.

Additionally, misuse of the Internet has become more prevalent as the utilization of social media, mobile devices, and e-mail has become more popular over time (Sanna, 2014). The use of encryption technology is required when transmitting any PHI electronically, including e-mail and intra-facility messaging systems. The use of encryption technology also applies to the transmission of PHI over mobile devices, such as tablet computers, wearable watches, and mobile phones (Palacios-González, 2014). Furthermore, unauthorized posting or publishing of PHI on social media websites and applications, such as Facebook, Instagram, and SnapChat, is prohibited – even if the post has not directly identified the patient (Palacios-González, 2014; Sanna, 2014). Clinical photography is a primary area of interest and concern regarding social media, as it may be used to promote the healthcare facility and the services it provides. However, restrictions regarding the use of clinical photography are necessary, as distinctive marks (such as tattoos or scars) or images of the patient's face can lead to their inadvertent detection or recognition by other viewers. Informed consent is thus required from patients prior to posting clinical photographs on any type of social media, and patients must be thoroughly educated regarding the potential risks associated with the posting of clinical

photographs on various websites and mobile applications (Palacios-González, 2014). As the use of social media for the promotion of clinical facilities continues to grow, the importance of educating healthcare providers regarding permitted versus unlawful postings of patients' private information becomes an increasingly important component of HIPAA training.

Though mishandling of written records has become less problematic with the advent of electronic medical record systems, many healthcare facilities do continue to utilize or maintain written or printed documents containing patients' private information (Sanna, 2014). In audiology facilities, paper audiograms or manual scoring record forms, such as the SCAN-3, may be used to document the results of audiometric or auditory processing evaluations. Written reports may also be used to document the results of vestibular evaluations or cochlear implant activation and follow-up appointments. Furthermore, the delivery of newly fabricated or repaired hearing instruments and accessory devices to audiology clinics, is accompanied by paperwork indicating the patient's name, audiometric data, hearing aid information, and corresponding serial numbers. Training of HIPAA privacy and security regulations, therefore, should include protocols and guidelines for the proper documentation, storage, and disposal of written records.

All written documentation of PHI must be stored and discarded properly in order to prevent the compromising of private data (Sanna, 2014). As a physical safeguard to

limit access to patients' healthcare records, HIPAA regulations indicate that all written documents containing PHI must be shredded prior to their disposal (Jacob, 2003). Additionally, by storing written records in a locked area and situating printing devices away from public viewing, opportunities for unauthorized disclosures of PHI can be greatly reduced (Jacob, 2003). The use of privacy screen protectors for computer monitors and confidentiality cover sheets when sending faxes are also simple, yet effective, means of limiting unauthorized or inadvertent disclosures of private written documents. Strict adherence to HIPAA requirements regarding the safeguarding of PHI is essential to maintaining patients' privacy in healthcare facilities. Furthermore, by exercising both caution and vigilance with regard to the use, storage, and disposal of written records, healthcare providers can contribute significantly to the protection of patients' confidential information.

Being overheard discussing sensitive patient information is an often overlooked, yet critical, factor to consider in healthcare facilities. Caution must be employed when discussing confidential information during in-person appointments as well as telephone conversations (Sanna, 2014). Both in-person discussions and telephone conversations should take place in private areas that limit opportunities for overhearing by other patients, visitors, or employees. Furthermore, while HIPAA regulations do not forbid providers from leaving voicemail messages for patients (when necessary), PHI should not be disclosed unless permission has been previously obtained from the patient (Sanna,

2014). While the overhearing of patient-provider interactions or discussions often occurs unintentionally, its effects can be devastating for patients if PHI is revealed.

The risk of being overheard discussing PHI is a particularly important factor to consider in audiology facilities. This concern results from the elevated intensity and slower rate at which audiologists may be required to speak in order to interact with patients with impaired hearing (Zapala and Hawkins, 2008). "Speech privacy" refers to confidential discussions that occur between the clinician and the patient in the examination room (Bradley, Apfel, and Gover, 2009; Clamp, Grant, Zapala, and Hawkins, 2011). Speech privacy can be evaluated by calculating the articulation index (AI) outside a clinic room, which is "based on background noise and the transmission of pure-tone signals at one-third octave bands" (Clamp et al., 2011, p. 144). AI calculations range between 0.0 and 1.0. Increased AI values are indicative of less privacy in a clinical area, whereas reduced/low AI values are associated with greater speech privacy (Zapala and Hawkins, 2011). Therefore, a clinical area with a measured AI value of 0.0 is considered an optimal environment for discussing private information.

Though AI values play a role in determining the speech privacy of clinical areas, they are not the only factor to consider. Zapala and Hawkins (2011) found that speech privacy can also be compromised by the simultaneous use of adjacent rooms and reduced ambient noise levels in acoustically insufficient clinical environments. In busy clinical practices, speech privacy may be neglected and, consequently, compromise patients' PHI.

In order to increase speech privacy in audiology clinics, Zapala and Hawkins (2011) suggest the use of ambient masking sounds (such as a running fan) and personal amplifiers when communicating with patients who have a significant hearing impairment. When applicable, audiologists should also ensure that patients are utilizing their hearing instruments while communicating with them. Patients' use of their hearing instruments during appointments can significantly reduce the level at which audiologists are required to speak, possibly facilitating increasingly private patient-provider interactions. Admittedly, audiologists, and healthcare providers in general, have limited control over the acoustic characteristics of the clinical areas in which they work. However, they can contribute to increased privacy of patient-provider interactions by ensuring that office doors are closed and carefully monitoring access to clinical areas, so as to prevent other patients and visitors from overhearing confidential information.

Many common violations of HIPAA privacy and security regulations result from providers' lack of knowledge or understanding of the rules and their implications for clinical practice. In a study of HIPAA compliance in U.S. hospitals, Having and Davis (2005) invited the designated HIPAA officer at 1,000 U.S. hospitals to participate in a survey focused on privacy and security compliance. The survey yielded responses from 286 HIPAA officers. When prompted to assess their own level of compliance with federal security regulations, 29% reported that they were between 76 and 100% compliant while 38% indicated that they were between 51 and 75% compliant with

HIPAA security statues. The remaining 8% reported that they felt as though they were 25% or less compliant with security standards. Then, when asked to identify what they perceived to be the greatest threat to HIPAA compliance, the majority of participants (70%) cited "employee error." Specifically, 46% reported that they felt as though support staff members proposed the most significant threat to compliance with security regulations. Participants were also asked to describe the areas of compliance that they considered to be the most challenging or problematic. The most common responses surrounded issues of employee education and corresponding adherence concerns as well as security concerns relating to access, inter-facility networking, and password protection (Having and Davis, 2005). When prompted to identify the most effective means of reducing security threats and breaches, the majority of respondents reported that they felt as though education and training of health care providers and support staff played the most significant role in HIPAA security compliance.

Collectively, the findings of this study highlight the importance of provider and support staff training in increasing HIPAA compliance and reducing breaches of PHI. As Having and Davis (2005) emphasize, HIPAA training is an essential requirement for every employee in healthcare facilities. Furthermore, routine reminders and annual refresher HIPAA training courses play a critical role in continually emphasizing the importance of privacy and security statutes to providers and support staff and ensuring their ongoing compliance with them. Having and Davis (2005) suggest that computerized

modules, visual reminders, automated training programs, and positive reinforcement should be incorporated in the facility's training strategies and protocols. Employing a variety of HIPAA training and educational strategies can help to reinforce the importance of federal privacy and security regulations. By holding providers and support staff accountable for their understanding and adherence to HIPAA privacy and security regulations, compromises of PHI can be greatly reduced.

The importance of healthcare providers', including audiologists' and corresponding support staff's, comprehension of and adherence to HIPAA regulations, particularly those surrounding the Privacy and Security Rules, cannot be overstated. Adherence to HIPAA regulations is everyone's responsibility. Thorough educational efforts and training programs play the greatest role in increasing HIPAA compliance and reducing the misuse of PHI in healthcare facilities. Initial HIPAA training should also be supplemented by periodic review courses and updates regarding modifications or changes to federal privacy and security statues (Lewis, 2013). In order to create a culture in which HIPAA regulations are truly understood and valued, emphasis must be placed on the implications for patients when their PHI is compromised or unlawfully disclosed. Utilization of educational programs that emphasize each healthcare provider's role in safeguarding PHI can substantially reduce violations of federal privacy and security regulations. The protection of patients' confidential information is critical to creating and

sustaining an environment in which patients feel confident in the healthcare services they receive – as well as those who provide them.

Chapter 3

Methods

Participants

This study was determined exempt from Institutional Review Board (IRB) review at The Ohio State University. Participants consisted of professionally licensed audiologists in Ohio who were recruited via the American Academy of Audiology, the American Speech-Language-Hearing Association, and/or the Ohio Academy of Audiology's website of providers, all of which are available for public viewing. The identified audiologists were employed in a variety of clinical settings, such as: universities, private practice, speech and hearing clinics, ear, nose, and throat (ENT) facilities, hospitals, and Veterans Affairs Medical Centers.

Questionnaire

A 30-item questionnaire was constructed using www.surveyplanet.com, a survey generating website. The survey was used to collect information and data regarding audiologists' knowledge of the federal statutes established by HIPAA and HITECH, as well as audiologists' sources of education and training regarding the federal regulations. The survey was developed to identify the type of environment in which audiologists are employed, their level of education, the amount of time (described in months or years) they have been employed as professionally licensed audiologists, and the year in which graduated from a master's or doctoral audiology program. Additionally, the survey

sought to identify the sources of education and training regarding HIPAA statutes that are available in each clinical environment.

Recruitment e-mails requesting participation in the initial online survey were sent to 715 professionally licensed audiologists in Ohio. Professionally licensed Ohio audiologists were initially contacted via e-mail to request their voluntary participation in the online survey. Identifiers were not collected for participation in the survey, in an attempt to protect the privacy interests of the participants. After the initial recruitment e-mail was distributed, a reminder e-mail was sent to the same group of 715 professionally licensed Ohio audiologists regarding participation in the study. Contact to request participation in the survey was made a maximum of two times via e-mail. A lack of a response from any licensed Ohio audiologist whose voluntary participation was requested via e-mail was interpreted as a decline to participate in the study. The initial survey recruitment e-mail is included in Appendix A and the reminder survey e-mail is included in Appendix B.

Participation in the questionnaire was voluntary and personal identifiers were not collected from participants. The researcher was not able to associate responses with individual participants. However, participants were also informed regarding the limitations associated with the possibility of guaranteeing confidentiality when data is collected online, as use of the Internet for the survey did include the chance that someone

could access participants' online responses without permission. The 30-item online survey questionnaire can be found in Appendix C.

Focus Group

The data collected from the online questionnaire was calculated and interpreted for intended use with a proposed subsequent focus group consisting of four to six professionally licensed audiologists in Ohio. Recruitment e-mails requesting participation in the proposed subsequent focus group were sent to 715 professionally licensed audiologists in Ohio as well. The proposed focus group was scheduled to meet one time at a designated location in Columbus, Ohio, for a maximum duration of sixty minutes. Participation in the focus group was voluntary. After the initial recruitment e-mail was distributed, a reminder e-mail was sent to the same group of 715 professionally licensed audiologists in Ohio regarding their participation in the focus group. A lack of a response from any licensed Ohio audiologist whose voluntary participation was requested via e-mail was interpreted as a decline to participate in the focus group. Both the original and reminder attempts at recruiting audiologists to participate in the focus group [via e-mail] were unsuccessful, as no positive responses regarding willingness to partake in the second portion of the study were obtained. The initial focus group recruitment can be found in Appendix C and the reminder focus group recruitment e-mail can be found in Appendix D.

Due to the lack of positive responses obtained regarding participation in the originally proposed in-person focus group, nine professionally licensed Ohio audiologists were subsequently personally contacted, via e-mail, requesting their feedback to questions regarding the HIPAA training and education provided to them in their respective clinical employment settings. The pre-generated focus group discussion questions (originally intended for use with an in-person focus group) were attached, via a Microsoft Word document, to the recruitment e-mail and the audiologists who were contacted were advised that responses could be submitted electronically in the attached document as well. The audiologists were informed that participation was voluntary, and they were also informed that a response to each question was not required if they did not feel comfortable providing one. The information and feedback collected from the designated questions was also maintained as confidential, and the documented results did not include any personal identifiers. The information and feedback collected have been utilized to develop various strategies to improve and enhance HIPAA training efforts and protocols in clinical audiological facilities. The focus group discussion questions can be found in Appendix F.

Chapter 4

Results

Online Questionnaire

Background Information

Of the 715 professionally licensed audiologists in Ohio who were contacted regarding participation in the study, 66 responses were received and used in the final analysis of the online questionnaire. Thus, the final response rate was 9.23%. The primary work environments reported by participants included Ear, Nose, and Throat (ENT) practices (15.2%), private practice (12.1%), hospitals (28.8%), speech and hearing clinics (9.1%), Veterans Affairs Medical Centers (7.6%), and universities (9.1%). An additional 18.2% of participants responded "other," thus indicating that their primary work environment was not listed as a response option.

The highest educational degree reported by participants ranged from a master's degree to a doctoral Degree, and the year in which participants obtained their highest degree to date ranged between 1970 and 2014. Based on the data collected, to date, the majority of participants (72.7%) have earned a doctoral level degree in the field of audiology; while 62.1% indicated that they have earned a Doctorate of Audiology (Au.D.), 10.6% of respondents reported their highest obtained degree is a Doctorate of Philosophy (Ph.D.). The remaining 27.3% of participants reported that their highest earned degree, to date, is a master's degree (M.A./M.S.). The majority (74.2%) of

respondents reported that their graduate program did not provide any (i.e. "zero") classes regarding the federal statutes established by HIPAA; however, 22.7% indicated that one class was provided during their graduate program and 3% reported that two relevant classes were provided. No questionnaire participants selected the response options of "three" or "four" classes.

The duration of time that participants have been employed as professionally licensed audiologists ranged from "less than 12 months" (4.6%) to "more than twenty years" (38.5%). Responses also included "one to five years" (18.5%), "six to ten years" (10.8%), "ten to fifteen years" (12.3%), and "sixteen to twenty years" (15.4%).

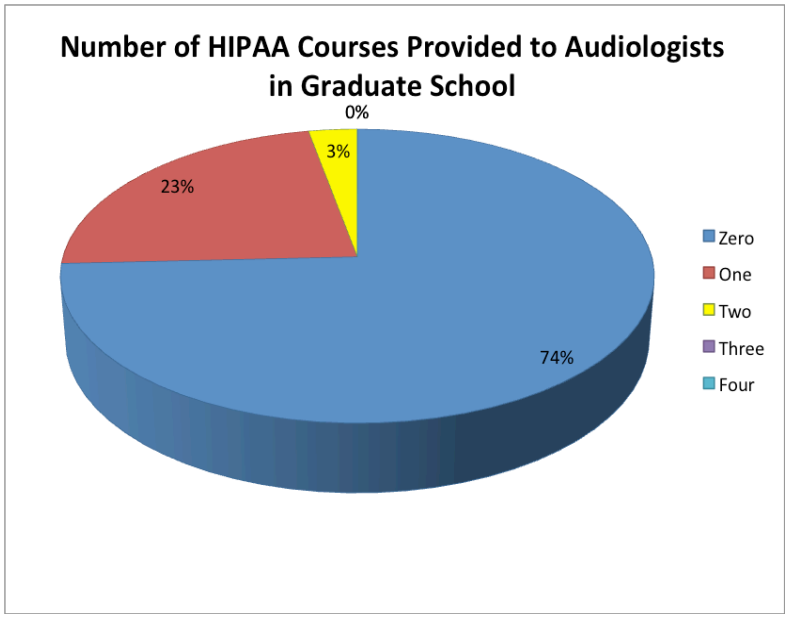

Figure 1: Number of HIPAA Courses Provided to Audiologists in Graduate School

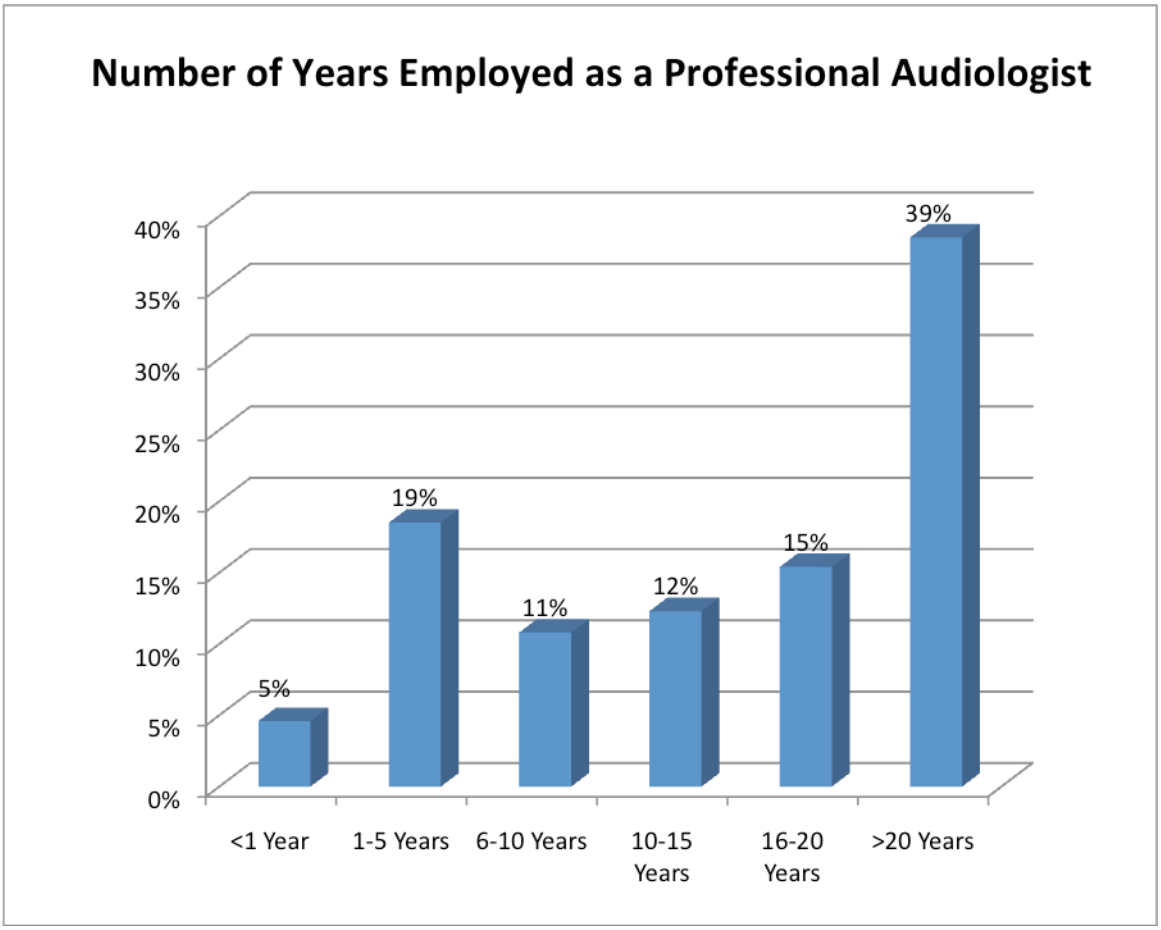

Figure 2: Number of Years Employed as a Professional Audiologist

Federal Privacy and Security Statutes

The Federal Privacy and Security Statutes portion of the online questionnaire encompassed question items 6 – 27, all of which were formatted to include multiple-choice response options. In question six, participants were asked to identify the purpose/s of the HIPAA. Only half of surveyed audiologists (50%) selected the correct answer choice (f), which indicated that the purposes of HIPAA are "to reduce the misuse of

health information, insurance, and health care services," "reduce the cost of health care insurance," and "protect the privacy and security of health information." Then, in question item 7, participants were asked to identify the title of HIPAA under which the Privacy and Security Rules are included. The majority of respondents did provide an accurate response to this question, as only 30.2% correctly selected choice (b) Title II: Administrative Simplification. While half of the surveyed audiologists (50.8%) incorrectly selected (a) Title I: Health Insurance Reform, 19% incorrectly choose (d) Title IV: Application and Enforcement of Group Health Plan Requirements. None of the participants selected response items (c) Title III: Taxed Related Health Provisions or (e) Title V: Revenue Offsets.

Questions 8 and 9 focused on the purposes of the Privacy and Security Rules, respectively. The four response options for questions 8 and 9 were identical to one another. Question 8 prompted participants to select the statement that best described the HIPAA Privacy Rule. The correct response choice, (a) "Features a set of national standards that focus on the use and disclosure of PHI (PHI) by covered entities," was only selected by 33.8% of participants. While 44.6% incorrectly selected choice (d), which indicated that the Privacy Rule provides a set of national standards to safeguard both PHI and de-identified PHI, fewer respondents (15.4%) incorrectly selected choice (b), which indicated that the Privacy Rule only applies to the use and disclosure or written and oral PHI as well as de-identified PHI. A small minority of participants (6.2%)

inaccurately selected choice (c) “Features a set of national standards to safeguard the electronic generation, storage, use, and transmission of PHI.”

Subsequently, in question 9, participants were asked to select the statement that best described the HIPAA Security Rule. The resulting responses to question 9 were as follows: (a) 9.2%, (b) 3.1%, (c) 24.6%, and (d) 63.1%. The majority of participants did not select the correct answer, choice (c). The results of questions 8 and 9 highlight the need for increased education regarding the HIPAA Privacy and Security Rules in clinical audiological settings. In question 10, participants were asked to identify examples of covered entities under HIPAA. Half of respondents (50.8%) correctly identified health care plans (such as Aetna and Aflac) and audiology clinics as covered entities under HIPAA, which corresponded with answer choice (e). None of the respondents selected (a) attorneys or (c) accounting firms; however, 43.1% incorrectly selected (f) all of the above. Very few participants (3.1%) selected choices (b) health care plans or (d) audiology clinics.

Then, question 11 prompted participants to identify the entity responsible for enforcing the HIPAA Privacy and Security Rules as well as civil penalties associated with breaches of those rules. A total of four items served as response choices. This question was only answered correctly by 18.5% of respondents, who selected choice (d) The Office of Civil Rights. Forty-five percent of surveyed audiologists incorrectly selected (a) The U.S. Department of Justice (44.6%), while 24.6% incorrectly selected (b)

Center on Medical Record Rights and Privacy. A small minority of participants (12.3%) selected (c) The Office of the National Coordinator for Health Information Technology. In response to question 12, the majority of patients (61.5%) incorrectly believed that the statement, "HIPAA rules and regulations only apply to PHI," was false. Only 38.5% correctly determined that the statement was true. PHI (PHI) refers to individually identifiable health information that is transmitted or stored in any form (45 CFR 160.103). It excludes, however, information that is found in an individual's employment or educational records. Common identifiers include an individual's name, birth date, and social security number. The use or disclosure of de-identified health information, on the other hand, is not protected by HIPAA rules and regulations (45 CFR 164.514(b)).

When asked, in question 13, to identify the HIPAA rule/s that outline the national regulations to protect individuals' e-PHI, 40% of respondents selected the correct answer choice (d), which included both (a) the Privacy Rule and (b) the Security Rule. Few respondents selected (a) the Privacy Rule (10.8%), (b) the Security Rule (16.9%) or (c) the HIPAA Technology Rule (4.6%). However, 27.7% incorrectly selected (e) "All of the above." In question 14, only 24.6% correctly identified the safeguards required by the Security Rule, which were accurately described by choice (b) administrative, physical, and technical safeguards. While 33.8% incorrectly selected choice (d), 23.1% inaccurately selected choice (c). Few audiologists (18.5%) incorrectly choose (a) administrative, organizational, and physical safeguards (18.5%), The responses to

question 14 demonstrated that the majority of participants were unaware of one or more of the required safeguards associated with the Security Rule. However, when asked in question 15 to determine if the statement, "The HIPAA Privacy Rule does not apply to health care providers who do not have electronic health records," was true or false, all participants (100%) correctly identified it as "false." The results of question 15 demonstrate that participants are aware that the Privacy Rule applies to all health care providers, regardless of their use of electronic health records.

The following item, question 16, asked participants to identify the type of PHI transmissions that are covered by the Security Rule. The majority of participants (87.7%) incorrectly selected choice (d) "All of the above," while only 12.3% correctly selected choice (b) "electronically." None of the audiologists singularly identified oral or written transmissions of PHI as being covered by the Security Rule. Subsequently, in question 17, participants were prompted to determine if the statement, "Under the HIPAA Privacy Rule, covered entities are only required provide patients with a Notice of Privacy Practices (NPP) at the initial visit," was accurate or inaccurate. More than half of participants (58.5%) incorrectly asserted that the statement was "false," while 41.5% accurately identified the statement as "true." In response to question 18, which prompted respondents to correctly identify an example of a physical safeguard required by the Security Rule, 37.5% correctly selected (c) "workstation use policies to ensure proper access to and use of workstations." Twenty-eight percent incorrectly chose (a) "staff

training to establish knowledge and compliance with HIPAA security regulations and procedures, while 26.6% inaccurately selected (b) controls on access to electronic health records. Few audiologists (7.8%) indicated that they believed (d) designation of a security officer to be the appropriate response.

Questions 19-22 focused on audiologists' knowledge and understanding of PHI and demonstrated that the majority of participants did not exhibit extensive knowledge regarding indicators and/or de-identification of PHI. In question 19, slightly more than half of participants (52.3%) correctly identified the statement, "Not all individually identifiable health information (IIHI), such as that which is found in educational or employment records, is considered PHI," as (a) "true." The remaining participants (47.7%) incorrectly selected answer choice (b) "false," demonstrating that only slightly more than half of participants were able to accurately differentiate IIHI and PHI. Then, in question 20, only 24.6% were able to accurately identify examples of potential PHI, which was represented by answer choice (d) "All of the above" (including audiograms, license plate numbers, and tattoos). The remaining incorrect response options included: (a) Audiograms (73.8%), (b) License plate number (0.02%), (c) Tattoos (0.02%), and (d) All of the above (24.6%).

Question 21 asked respondents to determine the accuracy of the statement, "'De-identification' of PHI can be accomplished by removing the patient's name, address and social security from their health records." The correct answer, "false," was selected by a

minority of participants (24.6%), demonstrating that the majority of participants (75.4%) did not exhibit an accurate understanding of proper de-identification of PHI. Then, in question 22, participants were prompted to determine which, of four response options, was NOT considered a permitted disclosure of PHI. The majority of participants (43.1%) appropriately identified multiple choice option (c), "Providing information to an employer (e.g. pre-employment physical)", as the correct answer. The remaining incorrect responses included: (a) Fraud and compliance programs (24.6%), (b) Receiving payment for healthcare services (13.8%), and (d) Use of the information is authorized by the patient (18.5%).

The following two questions, 23 and 24, focused on violations of HIPAA rules and regulations, as well as associated consequences. The results of questions 23 and 24 indicated that the majority of participants possessed basic knowledge regarding the process for reporting HIPAA violations as well as the potential consequences associated with violations of HIPAA statues. In question 23, participants were asked to identify the ways in which breaches of the HIPAA Privacy and Security Rules are reported. A significant majority of participants (83.9%) correctly identified answer choice (d) "All of the above," which included (a) "reporting the incident to the designated HIPAA Privacy or Security Officer," (b) "informing a supervisor," and (c) "filing a HIPAA report or complaint." While 11.3% of respondents incorrectly selected answer choice (a), less than 1% of participants selected answer choices (b) and (c). Subsequently, in question 24, a

large majority of participants accurately determined that HIPAA violations are punishable by both civil and criminal penalties. Few respondents incorrectly believed that HIPAA violations are punishable strictly by civil penalties (18.5%) or criminal penalties (62%).

The final three online survey questions (items 25-27) focused specifically on HITECH. In question 25, only 29.7% of respondents accurately identified the full title, choice (b) Health Information Technology for Economic and Clinical Health Act, associated with the acronym "HITECH." Instead, a greater number of participating audiologists (32.8%) incorrectly identified choice (c), "Health Information Technology for Effective Clinical Healthcare Act," as the full HITECH title. The additional inaccurate multiple-choice options, (d) "Health Information Training for Ethical Clinical Healthcare Act" and (a) "Healthcare Initiative for the Treatment and Ethical Consideration of Humans Act," yielded responses of 23.4% and 14.1%, respectively. In question 26, audiologists were prompted to correctly identify, from eight possible multiple-choice options, the purpose of the HITECH Act of 2009. The multiple choice response options consisted of four descriptive statements, including: (a) Legislation focused on the increased privacy and security of protection health information (11.1%), (b) Legislation to address and ensure the continuity of health care coverage, (c) Legislation to improve the use of medicals savings accounts, and (d) Legislation to address breaches of PHI, as well as four additional combination response options,

including: (e) A and D (52.4%), (f) B and C, (g) A, C, and D (6.3%), and (h) All of the above (28.6%). Only slightly more than half of audiologists (52.4%) were able to correctly identify the purpose/s of the HITECH Act of 2009, which was accurately described by answer choice (e) A and D. One participating audiologist selected answer choice (c), while none of the respondents selected response items (b), (d), or (f).

Lastly, participants were asked to identify the situations in which patients must be informed of a security breach (in accordance with HITECH regulations). The response options included: (a) When the PHI is secured by encryption technology (0), (b) Within 30 days of discovering the breach (41.3%), (c) When the PHI is not secured by encryption technology (0), (d) B and C (41.3%), and (e) All of the above (17.5%). None of the participating audiologists selected the designated correct response item, answer choice (c). According to the HITECH Act (2009), covered entities are required to notify affected individuals of breaches of PHI if it was not secured by encryption technology. Additionally, covered entities are required to notify affected individuals "without unreasonable delay and in no case later than 60 days following the discovery of a breach" (Section 13402). Due to discrepancies between the descriptions provided by the HITECH Act and in the online questionnaire regarding the required time frame for breaches of unsecured PHI, the results of this question were not included in the final analysis of the online questionnaire.

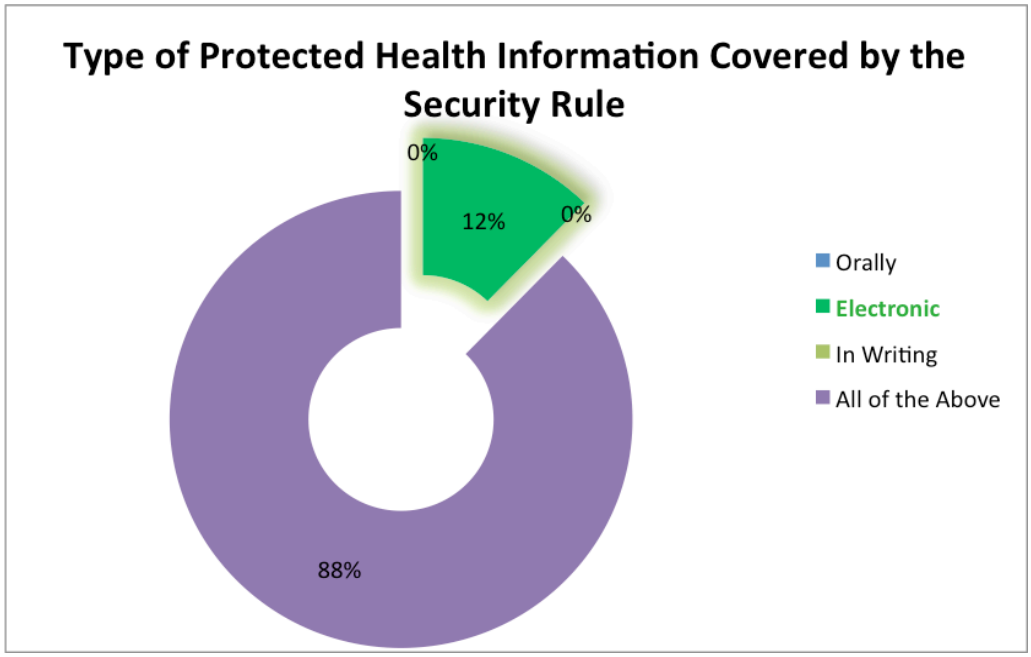

Figure 3: Types of Protected Health Information Covered by the Security Rule

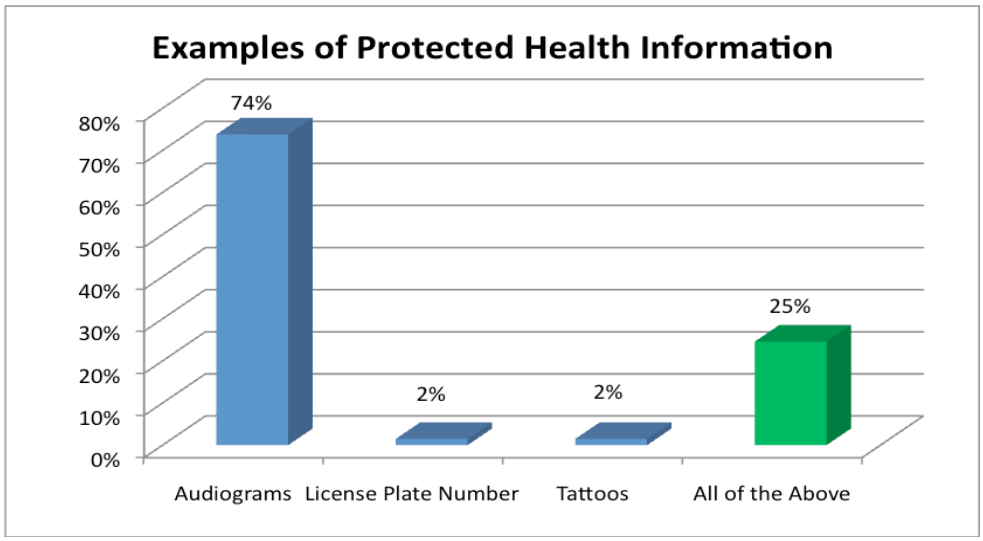

Figure 4: Examples of Protected Health Information

Education and Training

In inquiring as to how frequently education and training regarding HIPAA regulations is provided to participants [in their primary work environments], 56.3% reported that it offered "once a year or more" while 23.4% of respondents indicated that it provided "upon hiring." Additionally, 9.4% indicated that education and training are provided "less than once a year" and 10.9% reported that training and education are "never" offered in their primary work environments.

Audiologists were subsequently asked to identify the type or types of training and education that are provided in their primary work environments regarding federal privacy and security statutes. They were able to select as many responses as applied. Of the 66 participants, 65 individuals provided a response (or responses) to this question item, while one participant left this item blank. Forty-three percent of respondents reported that they have been provided with "online informational coursework or modules" regarding HIPAA privacy and security statutes, while 27.9% indicated that they have received "written materials (including handbooks and pamphlets)." An additional 21.3% reported that they have received training in the form of "in-class informational seminars and/or coursework." Finally, 0.08% indicated that they have been provided with "other" types of training and education and 0.08% choose the response option "none."

Lastly, participants were asked to choose one of five possible statements that best described their confidence level regarding their knowledge and understanding of current

HIPAA regulations and rules. Sixty-five of the 66 participants provided a response to this question item while 1 participant did not provide a response. Response items ranged from "I am very confident in my knowledge and understanding of current HIPPA statutes and regulations" to "I am very unconfident in my knowledge and understanding of current HIPPA statutes and regulations. Six percent of participants reported being "very confident," while 52.3% indicated that they were "somewhat confident." Additionally, 26.2% reported that they were "neither confident nor unconfident" while 13.8% reported being "unconfident." Finally, 0.02% indicated that they were "very unconfident in my knowledge and understanding of current HIPPA statutes and regulations."

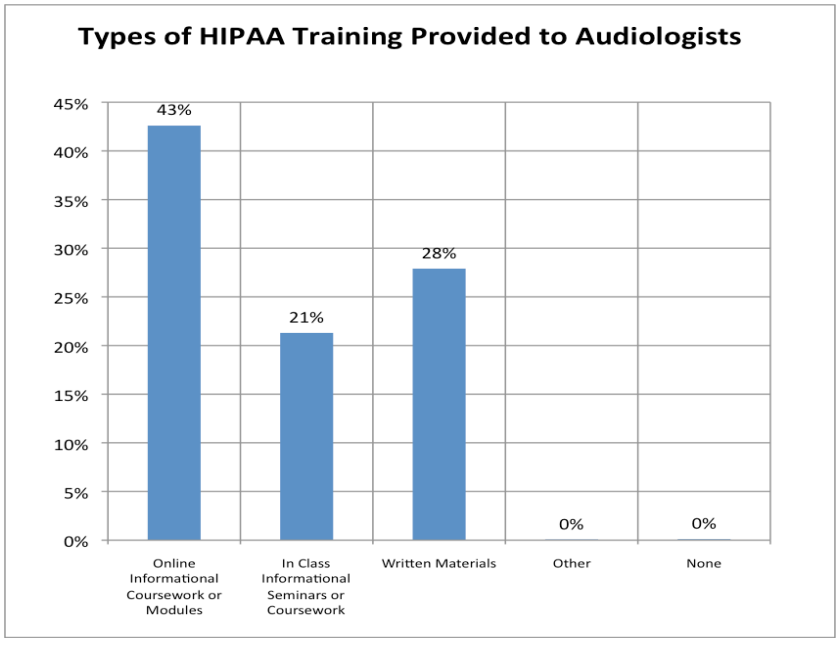

Figure 5: Types of HIPAA Training Provided to Audiologists

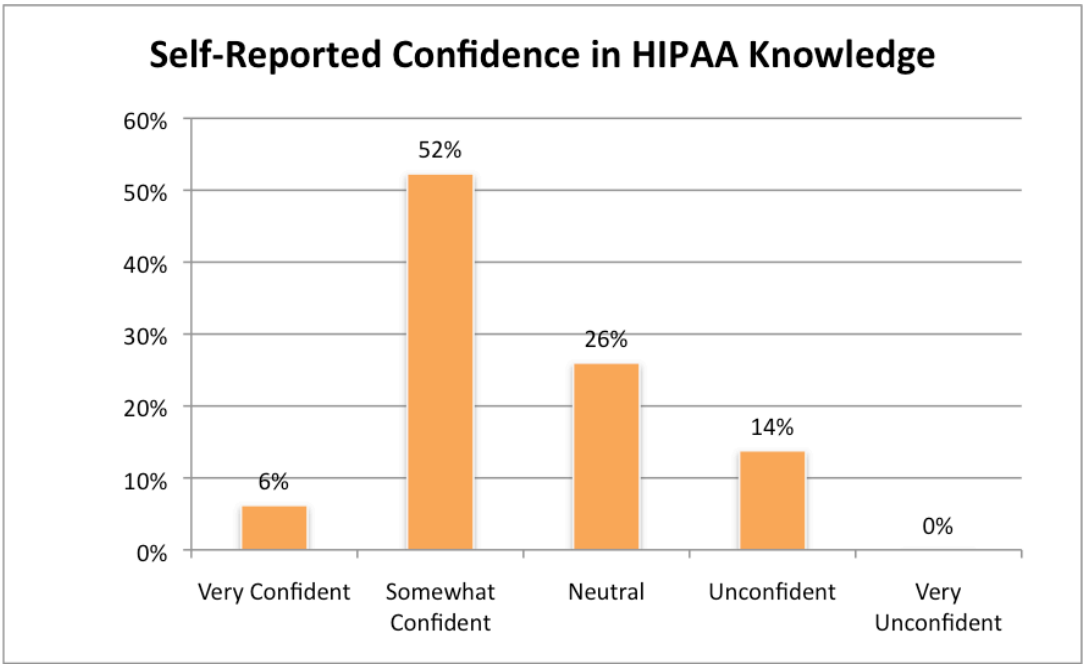

Figure 6: Self-Reported Confidence in HIPAA Knowledge

Focus Group

Of the 715 professionally licensed audiologists in Ohio who were originally contacted regarding participation in the focus group, no positive replies were received in response to the corresponding recruitment or reminder e-mails. Of the nine professionally licensed audiologists in Ohio who were subsequently [personally] contacted requesting their feedback to pre-generated discussion questions regarding HIPAA training and educational methods, five electronic and two in-person responses were received and used in the final analysis of the online questionnaire. Thus, the final response rate was 71.4%. All seven participating audiologists were female (100%). The primary work

environments reported by participants included Veterans Affairs Medical Centers (43%), hospitals (29%), and university speech and hearing clinics (14%). One respondent reported employment in both a Veterans Affairs Medical Center and university speech and hearing clinic (14%).

Discussion Questions

Currently Utilized HIPAA Training and Educational Methods

Six pre-generated discussion questions were utilized in the second portion of the study, which focused on the training and/or education regarding HIPAA regulations that is (or has been) provided to audiologists in their primary work environments. In question one, participants were asked to identify the protocols and strategies that are currently utilized in their workplaces regarding the federal statutes and regulations established by HIPAA. All seven participants reported that training is primarily completed through online courses and modules. Two participants indicated that, upon hiring, employees are required to complete in-person HIPAA training during New Employee Orientation as well. One audiologist indicated that, though an online course is offered in her workplace, "If requested, in-person group training could be set up." The audiologist also added that in-person group training "must be sought out by the employee" as the employer does not require it.

Slightly less than half of participants (43%), all of whom are employed in Veterans Affairs Medical Centers (VAMC), indicated that their annually required online

HIPAA training consists of a PowerPoint presentation, which is accompanied by audio-visual modules, and corresponding quiz questions. Additionally, one of the participating VAMC audiologists reported that there is a designated person in her workplace who "addresses any HIPAA issues" and is "always available for questions regarding HIPAA." She indicated that doctoral audiology students who complete clinical rotations at the VAMC are required to complete "online HIPAA and privacy training prior to starting their externships" as well.

In discussing the implementation of HIPAA rules and statutes in one participant's workplace, a hospital-employed audiologist described several protocols that are utilized in order to ensure the privacy and security of patients' information. For example, she reported that a patient's identity is ensured before being seen for any procedure by confirming his or her first and last name as well as their date of birth; furthermore, she indicated that, while working on the Mother-Infant Floor, "We also verify mom's first and last name and identification code on both the mom's and baby's [wrist] bands." The hospital-based audiologist also reported that designated "bins" are utilized in her workplace for the discarding of documents containing patient information, and that professional discussions with patients take place "behind closed doors (i.e. in the nursery, in a patient's room, in our office)."

In question two, audiologists were prompted to evaluate how effective the HIPAA training strategies and protocols that are utilized in their workplaces have been in their

education and understanding of HIPAA regulations. The majority of participants (86%) reported that, overall, they believe the training strategies used in their workplaces have been effective in providing them with a general understanding of HIPAA regulations. One audiologist, who works in a hospital setting, noted that the initial in-person training she initially received, and the reminder e-mails that she continues to receive, are particularly effective as a "reminder that this is an ongoing everyday concern." Another participating audiologist, who is employed in a Veterans Affairs Medical Center, reported that she believes the annual online training that is required by her workplace is effective because it "allows employees to access the training at any time (although a date is designated for annual renewal)." The audiologist also added, "The PowerPoint presentation can be printed for future reference," thus allowing the training to be accessed "when our schedules permit." While the majority of audiologists indicated satisfaction associated with the effectiveness of the HIPAA training protocols that are implemented in their workplaces, one participant (14%) noted, "I probably could have a more thorough understanding of HIPAA regulations."

Audiologists were then asked, in question three, "Does your workplace provide continuing education regarding HIPAA statues and modifications to those statues?" Additionally, participants were prompted, if applicable, to identify the methods of continuing education that are utilized in their workplaces (i.e. written materials, in-person training classes, etc.). All seven participants (100%) reported that continuing education

regarding HIPAA statutes and corresponding modifications is offered by their employers. Just over half of participants (57%) indicated that annual computer training is required in their workplaces. One audiologist indicated that, in her workplace, clinicians are typically notified via e-mail regarding modifications or updates to HIPAA regulations as well. She added that HIPAA modifications and/or updates are often reviewed at department staff meetings and also indicated, "This information would typically be added to our required continuing education in the form of a PowerPoint presentation with a designated date for completion." Another participant reported that, in addition to required new employee and annual review courses, the hospital in which she is employed features a HIPAA section in its intranet "that reviews what HIPAA is, how it affects employees as well as answers to FAQ re: HIPAA."

In response to question three, the majority of respondents reported satisfaction with the continuing education that is provided by their employers regarding HIPAA rules and regulations. However, one respondent commented that the only requirement that is implemented in her workplace regarding HIPAA continuing education is "one very long online course each year." The audiologist added, "I believe I would be more successful with written materials and updates or an occasional in-person training." Additionally, another respondent indicated that, while continuing education is offered through her workplace, its completion is not mandatory; instead, it must be "sought out by the employee."

Suggestions for Modifying and Enhancing HIPAA Training Strategies

Participants were prompted, in question four, to identify the educational strategies or methods that they believed would be beneficial in improving audiologists' knowledge and understanding of HIPAA statutes and regulations. The participating audiologists' responses to this inquiry varied considerably. Both hospital-based audiologists (29%) indicated that the educational strategies that are currently utilized in their work facilities are, generally, sufficient or satisfactory. Other participants, however, provided suggestions for improving audiologists' understanding of HIPAA regulations. For example, several respondents (29%) suggested that audiology-specific questions and concerns regarding HIPAA regulations may best be addressed during professional conferences, such as the American Academy of Audiology (AAA) convention and Ohio Audiology Conference (OAC), as well as audiology-specific online courses and resources, such as Audiology Online. One participant, who is employed in a university speech and hearing clinic, reported that she has participated in both an in-person course (offered at a AAA convention) and several online courses. In comparing the in-person and online course, she indicated that she found both formats to be "equally effective as long as there is an answer and question period offered and many good examples specific to audiology clinics."

In further response to question four, one participant described the majority of her previous training regarding HIPAA regulations as "long and drawn out," indicating that

this often results in decreased attention to and interest in the material being discussed. She reported that, instead, she would benefit from "periodic in-person continuing education opportunities" and updates via e-mail regarding modifications to HIPAA regulations. She also suggested that brief facts and bits of information, which she described as "Did you know? – type information," could be included in e-mail updates. A second respondent reported that she believes it is most critical/important for audiologists to recognize and comprehend "the big picture – protect your patient's information," as opposed to knowing specific HIPAA statutes. She further indicated that the "big picture" isn't "rocket science;" therefore, HIPAA training strategies and educational methods should highlight the main requirements and concepts associated with HIPAA privacy and security regulations.

In question five, participants were asked to identify how often they felt as though audiologists should be required to participate in HIPAA educational training (i.e. annually, bi-annually, etc). Responses included: "Annually," (43%), "One time total unless there are updates to the regulations," (29%), "Bi-annually," (14%), and "Every 5 years" (14%). Three participating audiologists indicated that they felt as though education regarding updates or modifications to HIPAA regulations and requirements should be provided as they occur as well. One participant also suggested that it would "probably would not be a bad idea to require [HIPAA training] (like the ethics requirement) as part of certification or licensure." Those who indicated that they felt as though completion of

HIPAA training should only be required one time, unless updates or modifications occur, reported that they felt this way because "otherwise the information doesn't change from year to year" and is thus redundant.

Finally, in question six, participants were offered the opportunity to provide additional comments and/or questions regarding currently utilized HIPAA training strategies or methods for improving audiologists' knowledge and understanding of HIPAA regulations. Three participants provided responses to this inquiry. One respondent commented, "It seems that the facility that the audiologist is working at should take responsibility to provide and update audiologists and other employees regarding HIPAA information." Another audiologist reported that she believes though "patients also need to be better educated about HIPAA." In expanding upon this comment, the audiologist provided several examples of patient scenarios that occur commonly/frequently in her workplace and demonstrate patient's lack of knowledge or understanding regarding HIPAA requirements. The participant indicated, "For example, yesterday, a patient wanted me to explain information to him regarding his hearing aids in the waiting room." The participant also added, "Patient's don't understand that I can't leave a voicemail message for them with any details regarding the reason for the call."

Lastly, in response to question six, an additional participating audiologist, who is employed in a hospital setting, proposed several specific concerns and questions that she has experienced "relating to HIPAA as an audiologist." These questions included: (1)

"How does HIPAA relate to our ability to work with hearing aid, CI manufacturers and with outside professionals (a clinical audiologist in the hospital talking with an educational audiologist)?," (2) "If I say I have a verbal consent from a parent, is this enough to speak with another professional?," and (3) "What about hearing aid information (warranty, purchase date etc) if the hearing aid was not purchased through my clinic?" Furthermore, in commenting on the ways in which the interpretation and enforcement of HIPAA regulations has changed over time, the respondent reported, "When HIPAA first was enacted, it was very strict (probably on the cautious side) and I think that has become more lax." She added that she believes this trend might be problematic, however, because "there are still times when professionals may be incorrectly invoking HIPAA when sharing or refusing to share information."

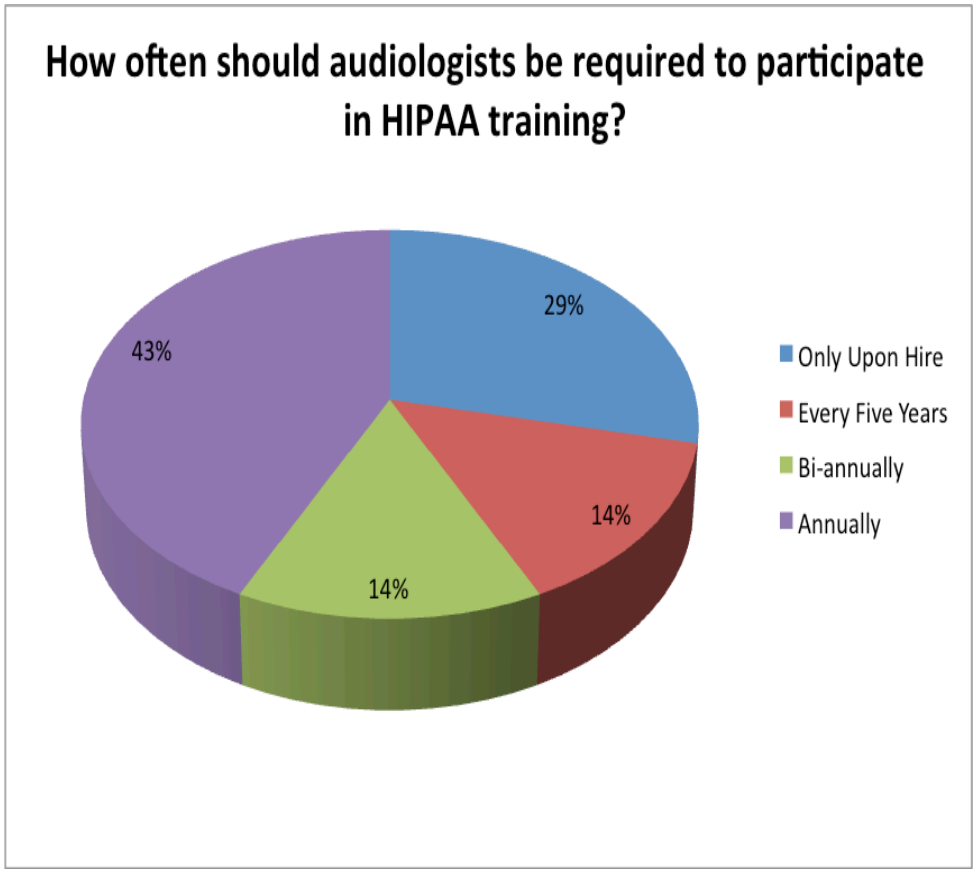

Figure 7: Frequency of Participation in Required HIPAA Training

Chapter 5

Discussion

This study aimed to examine the knowledge possessed by professionally licensed audiologists regarding HIPA. A 30-item survey was developed and utilized to assess audiologists' awareness and understanding of clinically relevant HIPAA statutes, particularly those concerning privacy and security regulations. The survey also examined the demographic characteristics of participants, including their primary work environment, level of education (and the year in which their highest degree was obtained), years of employment as an audiologist, and the number of HIPAA classes that were provided by their graduate program. Lastly, the survey briefly addressed the education and training that audiologists have received regarding HIPAA rules and regulations.

Subsequently, a more in-depth analysis of the currently utilized HIPAA training and/or educational methods in clinical audiological facilities was conducted. The examination of audiologists' HIPAA knowledge, as well as well as the corresponding training they've received, is critical to ensuring the protection of patients' health information. As such, the information and feedback gathered from the online survey and discussion questions may be useful in developing strategies to enhance HIPAA educational and training efforts in clinical audiological facilities.

Online Questionnaire

The majority of participants have been employed as professionally licensed audiologists for a minimum of ten years. Additionally, a large majority (74.2%) of respondents indicated that their graduate program did not provide any courses regarding HIPAA. This finding, though initially alarming, can be partially explained by the year in which many participating audiologists obtained their highest degree to date. As the United States Congress enacted HIPAA in 1996, the participants who graduated from audiology programs prior to that year, or shortly thereafter, would not have been offered and/or required to complete any HIPAA coursework or training. However, as 66.7% reported earning their highest degree to date between 2000-2014, the results of this study demonstrate that, even after its enactment, HIPAA courses have not been consistently offered or required across graduate programs.

The results of the initial survey demonstrated that audiologists currently possess limited knowledge and understanding of federal privacy and security regulations. Only 50% of respondents were able to accurately identify the main objectives of HIPAA and even fewer (30.2%) were aware of the HIPAA title under which the Privacy and Security Rules fall. Furthermore, the majority of participants were unable to correctly identify the purposes of the Privacy and Security Rules, as they were not able to distinguish the forms of information to which each rule applies. The Privacy Rule applies to any type of PHI, including written, electronic, or oral modes. The Security Rule, however, provides

specific rules to safeguard the electronic generation, storage, use, and transmission of PHI.

Despite these findings, all participants (100%) were able to discern that the Privacy Rule applies to all healthcare providers – regardless of their use of electronic medical record systems. The ability to distinguish the purpose of and regulations associated with both the Privacy Rule and Security Rule is crucial for audiologists, as electronic medical record systems are now employed in the vast majority of healthcare facilities. The application of and adherence to both the Privacy and Security Rules in clinical audiological facilities is essential to the protection of the patients' written, oral, and/or electronic health information. Therefore, the ability to distinguish between the modes of communication that these rules govern must be stressed to providers during HIPAA training.

Additionally, in the present study, the majority of audiologists were unable to correctly identify examples of what may be considered PHI. While the majority of participants knew that audiograms can be considered PHI, very few were aware that tattoos and license plate numbers can also be considered PHI. Only 50% knew that some individually identifiable health information (IIHI), such as that which is found in educational or employment records, is not considered PHI. Additionally, the majority of respondents were not aware that HIPAA regulations only apply to PHI. These findings demonstrate that audiologists lack a firm understanding of PHI, along with what it

encompasses versus excludes. A firm understanding of PHI is key to ensuring the privacy and security of patients' confidential information. Consequently, as noted by Callas and Brockmeier (2001), educating healthcare professionals regarding privacy standards must be a high priority during HIPAA training programs.

A lack of knowledge regarding PHI may lead to unintentional breaches or compromises of private healthcare records. Compromises of PHI can have grave consequences for both providers and patients, both of which must also be emphasized to healthcare professionals during initial and refresher HIPAA training courses. With respect to the process for reporting breaches of HIPAA statues, as well as the potential consequences associated with such breaches, the results of the initial survey are promising. The majority of audiologists (83.9%) correctly identified the proper protocol for reporting breaches of HIPAA Privacy and Security Rules. Furthermore, 75.4% were aware that violations of HIPAA regulations are punishable by both criminal and civil penalties. These findings demonstrate that the majority of audiologists possess a general understanding of the consequences of HIPAA violations and the necessary course of action for reporting privacy and security breaches.

Though the goal of training efforts is to increase healthcare providers' understanding of and compliance with HIPAA regulations, it is also important to clearly outline the process for reporting breaches if or when they occur. Additionally, conductance of a risk assessment and gap analysis is required of every healthcare facility

(Shaw, 2013). The risk assessment and gap analysis must include a careful examination of all systems in which PHI may be stored, such as computers and handheld devices. The goal of conducting these assessments is to determine the facility's compliance with federal privacy and security regulations as well as the probability for breaches to occur (Shaw, 2013). Once determined, a compliance plan can be established to appropriately focus on any gaps or areas of concern that have been identified during the risk assessment. Regardless of the gaps that are identified, proper training of healthcare providers and support staff will play a critical role in any established compliance plan.

In the initial survey, participating audiologists also demonstrated limited knowledge regarding HITECH. Less than half of participants (29.7%) were able to correctly identify the full title behind the acronym. Additionally, only [approximately] half of respondents were able to accurately determine the purpose/s of HITECH. As HITECH features key modifications to the original regulations and statutes established by HIPAA, an accurate understanding of its legislation is essential for all covered entities. Under HIPAA, the Office of Civil Rights (OCR) typically only conducted compliance audits following complaints and self-reported breaches in healthcare facilities (Lewis, 2013). However, HITECH mandates that the U.S. Department of Health and Human Services (HHS) perform periodic audits of covered entities as well as business associates. These audits are designed to assess the entity's (as well as business associate's) adherence to the Privacy and Security Rules as well as the breach notification

requirements (Lewis, 2013). As such, the monitoring and enforcement of HIPAA regulations has become increasingly stringent since its original enactment nearly twenty years ago.

Lastly, when prompted regarding the frequency of HIPAA training and educational requirements in their primary work environment, only approximately half of respondents reported that training is offered at least once a year. This finding indicates that a significant number of audiologists do not currently receive annual training and/or refresher information regarding federal privacy and security regulations. Many (audiologists indicated that training is provided through online informational coursework or modules, while fewer respondents indicated that HIPAA education is accomplished via in-class informational seminar/s or coursework or written materials. According to the U.S. Department of Health and Human Services (2013), training regarding federal privacy and security regulations is required of all healthcare employees upon hiring. Additionally, subsequent periodic refresher courses are required in order to ensure that healthcare providers and support staff remain vigilant in their compliance with HIPAA statutes.

The responses obtained from the initial survey highlight the need for audiologists' increased knowledge and understanding of HIPAA and HITECH regulations, particularly those concerning privacy and security regulations. The importance of training and education in healthcare facilities cannot be overstated, as it plays a critical role in

protecting confidential health information. As Lewis (2013) emphasizes, training of all employees, including both direct providers and support staff, is an essential compliance measure that must be employed on a regular basis. Requiring audiologists and corresponding support staff to participate in routine HIPAA training courses allows them to be held increasingly accountable for their decisions and practices as they apply to privacy and security regulations. Documentation of employee training as well as repercussions for any potential breaches of the federal privacy and security regulations is key to protecting patients as well as the healthcare establishment (Lewis, 2013). By emphasizing the importance of safeguarding PHI, as well as the potential consequences when breaches occur, audiologists can implement and utilize increasingly vigilant practices in their everyday patient interactions.

Discussion Questions

In the second portion of the study, seven Ohio-licensed audiologists provided in-depth responses to six pre-generated questions regarding the HIPAA training they have received in their work facilities. All of the participants indicated that computer-based training is incorporated into their work facility's HIPAA educational requirements. Two audiologists also reported that completion of an in-person training course or lecture is required during new employee orientation. Additionally, the vast majority of participants indicated that they believed that the training strategies and protocols that are utilized in their workplaces are effective. Several respondents indicated that they have found

computer-based training and e-mail reminders to be largely effective because they allow providers to access the training materials when their schedules permit. Furthermore, it reminds them that privacy and security regulations are an on-going concern in healthcare facilities.

According to Blair (2003), for many large healthcare facilities, computer-based training is advantageous because it facilitates the presentation of tailored materials as well as greater flexibility with regard to completion requirements. Online training is often more convenient for providers as it affords them the opportunity to complete the educational requirements at their own pace (Blair, 2003; Strauss, 2012). Additionally, computer-based modes of education allows for healthcare facilities to monitor and document providers' completion of required HIPAA training (Strauss, 2012). For large healthcare facilities and practices, computer-based training provides increased uniformity and ensures that all providers receive equivalent training regarding HIPAA rules and regulations.

In-person educational seminars, however, may be advantageous in departmental training, as they offer the opportunity to discuss federal privacy and security statutes in further detail. As opposed to generic computer-based training programs, in-person departmental training can be used to present practice-specific applications of the Privacy and Security Rules (Sterling, 2015). Furthermore, it allows providers to ask specific questions, address concerns, and collaborate with co-workers regarding strategies to

increase compliance with HIPAA regulations. In-person training may include lecture and/or written materials, group discussions, or case study examples (Strauss, 2012). It can also incorporate audiovisual materials, such as videos or PowerPoint presentations, in order to better illustrate the privacy and security regulations. While documentation of in-person training can be significantly more cumbersome and challenging in large healthcare facilities, it can often be an invaluable tool in thoroughly educating providers and reducing unintentional breaches of federal privacy and security requirements. Regardless of the training method/s that are utilized, educating healthcare providers and support staff regarding HIPAA statutes, as well as the consequences associated with breaches of the regulations, is key to protecting patients and ensuring the confidentiality of their health information.

The majority of participating audiologists reported that continuing education regarding HIPAA statues and corresponding modifications is required annually. Specifically, the vast majority of participants indicated that their workplace requires the completion of an annual computer-based review course. Several audiologists also indicated that e-mail notifications are used to inform providers of any modifications or updates to HIPAA rules and regulations. Though the majority of respondents reported that annual training is required by their workplace, one audiologist indicated that continuing education is offered through her workplace but must be requested by the employee. Required annual training should focus on and reiterate the main rules

established by HIPAA, so as to ensure that providers remain vigilant in their compliance with privacy and security regulations (Strauss, 2012). In order to help facilitate increased knowledge and understanding regarding HIPAA statutes and updates to privacy and security policies, Strauss (2012) suggests requiring focused refresher courses several times per year. In doing so, healthcare facilities could limit the amount of information that is provided per training session. This strategy may be beneficial in improving providers' retention of and compliance with privacy and security regulations, thus reducing unintentional compromises of patients' PHI.

Though the majority of respondents indicated that HIPAA training is required annually, less than half reported feeling as though HIPAA educational training should be mandated every year. Instead, responses varied from semi-annually to one time total, thus indicating that audiologists have conflicting opinions regarding the frequency at which HIPAA training and education should be required. Several respondents indicated that HIPAA regulations should primarily be reviewed when modifications or updates occur. These results suggest that the majority of audiologists do not view mandatory annual HIPAA training as necessary, thus highlighting the need for innovative educational methods. As Sterling (2015) reminds us, one of the most common threats to HIPAA compliance is inadequate staff training. When providers and support staff are not adequately trained, the risk of unintentional HIPAA breaches or violations increases significantly. Thus, in order to highlight the value and necessity associated with annual

HIPAA education, the training strategies that are utilized must be compelling, relevant, and motivating.

Several audiologists suggested that HIPAA training could be improved or enhanced by including in-person educational courses at audiology-specific events, such as the semi-annual Ohio Audiology Conference (OAC) or annual American Academy of Audiology (AAA) conference. In doing so, audiology-specific examples could be provided and a question-and-answer portion could be included to address questions pertaining to privacy and security regulations in audiology clinics. Other suggestions included electronic or in-person updates regarding changes to HIPAA regulations or the healthcare facility's privacy and security policies. As one respondent mentioned, adult learners may benefit most from ongoing, continuing education opportunities.

During any type of training or educational seminar, it is important to recognize the audience you are addressing and tailor the training program accordingly. The results of the current study highlight the need for improved HIPAA training and educational techniques in emphasizing the importance of federal privacy and security regulations. In order to improve adult learning in the workplace, Longenecker and Abernathy (2013) offer eight fundamental imperatives to consider when educating professionals. Several of their suggestions are directly applicable to the design and implementation of successful HIPAA training programs. First and foremost, adult learners must have a clear understanding of the relevance and significance of the information being provided to

them (Longenecker and Abernathy, 2013). Without emphasizing the importance of HIPAA regulations, as well as compliance with them, healthcare providers will be unlikely to grasp a true understanding of how federal privacy and security rules affect their everyday practice. As such, training programs and refresher courses must clearly state the objectives of HIPAA as well as the ways in which those objectives impact every provider in the healthcare facility. By stressing both the relevance and importance of privacy and security statutes to healthcare professionals, compliance will increase significantly.

Additionally, the information provided to professionals during educational programs must be delivered by a credible source (Longenecker and Abernathy, 2013). Regardless of the mode of delivery, HIPAA educational modules should be designed and implemented by professionals who are trained and knowledgeable in the federal laws and regulations. It is, thus, critical that the designated privacy and/or security officer in any healthcare facility be involved in the development of staff training and compliance programs (Sterling, 2015). The designated privacy and/or security officer is also responsible for modifying the practice's privacy and security policies, as well as addressing breaches of the federal law (Sterling, 2015). Therefore, they must be easily accessible and available to providers to address questions or concerns that may arise in daily practice.

Longenecker and Abernathy (2013) also highlight the importance of clearly defined learning objectives and accountability when training adult learners in the workplace. At the start of any HIPAA training program, the goals of the session should be illustrated and emphasized to healthcare providers. This is imperative to obtaining and maintaining the attention of participants as well as encouraging their active participation in the training program. Key objectives of HIPAA training surround education, safeguarding of PHI, and compliance with the federal regulations. These objectives should be reviewed at the conclusion of the training program as well, so as to reiterate the purpose of HIPAA education to healthcare providers.

Providers and support staff must be held accountable for the information that is presented to them as well as adherence to HIPAA statutes and rules. In its most basic form, accountability includes documented attendance; however, it can also include knowledge and skill-based assessments, on-site monitoring, and periodic audits (Hayden, 2013; Longenecker and Abernathy, 2013). The routine conductance of internal audits plays an important role in monitoring healthcare employees' use, storage, and discarding of PHI (Hayden, 2013). Furthermore, internal auditing can be used to assess the strengths and weaknesses of HIPAA training programs. Both defining explicit objectives of HIPAA training and holding employees accountable for the training provided to them is critical to maintaining compliance with privacy and security statutes.

Finally, the implementation of a successful learning experience for professionals is largely dependent upon the degree to which employees are engaged in the program (Longenecker and Abernathy, 2013). By incorporating active participation into HIPAA training programs, employees' intellectual stimulation and attention can be increased significantly. Longenecker and Abernathy (2013) encourage program developers to include discussion, hands-on opportunities, and activity-based approaches in training protocols. Though certainly more time-consuming to design and implement, the benefits of active program participation will likely include improvements in healthcare providers' comprehension and observance of HIPAA regulations. Hands-on activities and demonstrations may be most easily and effectively utilized in departmental training programs. By including both discussions and active participation in departmental HIPAA educational efforts, professionals can work together to ensure the privacy and security of PHI.

Limitations

The current study includes several limitations, which must be outlined and discussed. First and foremost, only professionally licensed audiologists in Ohio were invited to participate in the initial survey and the subsequent discussion questions. As such, the results are constrained by the limited geographic representation of the participating audiologists. The results of the study were also obtained anonymously and/or confidentially; therefore, the accuracy of the responses provided was not

verifiable. Audiologists may have relied on educated guesses to answer the online survey questions; furthermore, they could have referenced online or print HIPAA resources during completion of the survey in order to ensure accurate responses to the questions. Both factors could have obscured the results of the online survey.

Additionally, the results of the initial survey were largely limited by a low response rate of 9.23%. The low response rate may be explained, in part, by the aim of the survey and/or its content. Though personal identifiers were not collected from respondents, audiologists may have declined to participate because the survey aimed to assess their knowledge of federal laws and regulations. Compliance with HIPAA statutes is federally mandated in healthcare facilities. Therefore, audiologists may have chosen not to participate in the initial survey due to concerns regarding their ability to accurately identify HIPAA regulations. The low response rate may also stem from the format of the survey, which was administered electronically via a survey generating website. Electronic surveys are often advantageous because they offer added convenience and increased anonymity for participants; furthermore, they are more cost-effective and time-efficient to administer (Kittleson and Brown, 2005). However, the administration of mail surveys may have resulted in an increased response rate. For instance, in comparing the response rate of postal and e-mail surveys among subscribers to a medical education listserv, Mavis and Brocato (1998) found that the postal survey generated a significantly higher response than the e-mail survey.

Technological advances have certainly increased the use and popularity of the Internet over the past two decades. However, Mavis and Brocato (1998) suggest that mail surveys may yield higher response rates because of their physical form. Impersonal e-mail surveys can easily be discarded or ignored with the click of a button. Additionally, they may be mistaken or regarded as spam messages (Porter and Whitcomb, 2003). Paper surveys, on the other hand, are likely to linger in the view of the recipient until they are physically disposed of or completed (Mavis and Brocato, 1998). More recently, Kaplowitz, Hadlock, and Levine (2004) found that Internet-based and mail-based surveys yielded similar response rates when a mail notification regarding participation in the survey was sent to respondents in advance. As such, the current study may have generated a higher response rate if coupled with postal recruitment efforts.

Furthermore, the originally proposed in-person focus group lacked any positive responses to recruitment e-mails. As recruitment and reminder participation e-mails were sent to 715 professionally licensed audiologists in Ohio, the lack of positive responses could be due to several factors. The in-person focus group intended to focus on current HIPAA training and educational methods in participants' employment settings. Therefore, audiologists may have been hesitant to divulge this information to the researchers, as well as their colleagues, for fear of revealing issues related to non-compliance in their respective work environments. Furthermore, the designated location of the proposed in-person focus group was Columbus, Ohio. Audiologists who did not

reside within a reasonable distance of the designated focus group location were unlikely to participate due to time and travel constraints. Lastly, the generic format of the recruitment e-mails may have led audiologists to discard or disregard them. Personalization of the e-mails or incentives to participate may have resulted in a greater response rate, and may be advantageous recruitment tactics to consider in future studies pertaining to HIPAA training methods in audiology clinics.

When nine audiologists were then personally contacted requesting feedback to pre-generated questions regarding the HIPAA training and education provided to them, the final response rate was 71.4%. This high response rate may be attributable to both the personalization of the recruitment e-mail as well as the ability to provide feedback electronically. The electronic feedback obtained provided insight into currently utilized HIPAA training approaches. However, it did not allow for discussion and collaboration among professionals regarding strategies to improve HIPAA educational methods in audiology clinics. The conducting of a Web conference amongst audiologists may have yielded a higher response rate, while still allowing participants to engage from remote locations. The current study has highlighted the importance of both convenience and the anticipated time commitment when recruiting professionals to participate in research investigations – regardless of their mode of delivery.

Future Direction

In the current study, several respondents suggested that offering training seminars at audiology-specific conferences, such as AAA, could be beneficial in improving audiologists' knowledge and understanding of HIPAA regulations. As such, a future study could focus on the development and implementation of a HIPAA training course at a professional audiology conference or event. The course could address audiology-specific HIPAA concerns, which may be obtained from participants prior to or during the training seminar. The effectiveness of the training course could be evaluated by administering pre- and post- questionnaires to assess audiologists' confidence in their understanding of HIPAA rules and regulations. Such a study could be highly useful in developing strategies to improve audiologists' knowledge and comprehension of federal privacy and security regulations.

Future research could also focus on the development of HIPAA reminders and updates, which could be sent to audiologists periodically in an electronic format (such as e-mail). The majority of participating audiologists indicated that they felt as though periodic e-mail updates are, or would be, helpful in improving their understanding of HIPAA requirements. Therefore, the development of a quarterly e-mail or electronic newsletter containing HIPAA reminders, frequently asked questions (FAQs), and/or updates may be beneficial in increasing HIPAA compliance and decreasing breaches caused by negligence and/or ignorance. The use of periodic electronically administered updates and reminders would allow audiologists to access and reference the materials at a

time that is most convenient for them. Opportunities for audiologists to provide feedback, in the form of questions, comments, and/or concerns, would allow researchers to analyze the effectiveness and benefit of periodic electronic HIPAA reminders and updates.

Lastly, future research should focus on gaining subjective feedback from audiologists regarding their specific questions and concerns as they relate to adherence to HIPAA regulations and how it impacts their daily practices. As many HIPAA training programs provide generic information that is not tailored to any specific healthcare practice or profession, ambiguity regarding the application of federal privacy and security regulations to audiology clinics may result. If providers are unsure of how the regulations apply to their daily practices, unintentional breaches or compromises of patients' PHI are increasingly likely to occur. By gaining feedback from audiologists regarding their particular questions and concerns, tailored educational protocols and strategies could be developed to supplement generic HIPAA training requirements. These strategies could be implemented during departmental or facility meetings as well as continuing education seminars. Providing increased opportunities for audiologists to gain knowledge and understanding of how HIPAA regulations apply to and impact their daily practices is crucial to ensuring the privacy and security of patients' PHI.

Summary

The results of this study demonstrated that audiologists currently possess limited knowledge regarding the federal privacy and security statutes established by HIPAA.

Only half of audiologists were able to correctly identify the purposes of HIPAA and the majority of audiologists were unable to correctly discern the Privacy and Security Rules. Few audiologists accurately identified examples of PHI or the three safeguards (administrative, physical, and technical) required by the Security Rule. Furthermore, only half of audiologists were able to identify the purpose/s of the HITECH Act of 2009. The majority of respondents indicated that they were "neither confident nor unconfident" or "somewhat unconfident" in their knowledge and understanding of HIPAA regulations. These findings highlight the need for improved HIPAA training programs and strategies, as education and training play a critical role in the safeguarding of patients' PHI.

The results of this study also indicated that the majority of audiologists receive annual online training and education regarding HIPAA rules and regulations. The majority of participating audiologists did not report having received in-person training as new employees or during subsequent annual HIPAA refresher courses. Nearly all of the respondents indicated that they believe the training they have received has been effective in their education and understanding of HIPAA regulations; however, several suggested that their knowledge could be improved if questions and/or concerns were addressed at audiology-specific venues. Additionally, approximately half of participating audiologists did not indicate that they felt as though annual HIPAA training was necessary, citing that education should primarily be required if or when updates to the regulations occur.

The responses obtained from both the initial online survey and subsequent discussion questions demonstrate the need for both compelling and motivating HIPAA training and educational strategies. Engaging audiologists in training programs that emphasize their role in guarding patients' PHI and allow for active participation can better emphasize the importance and significance of HIPAA compliance. This may be accomplished, in part, by supplementing generic HIPAA training requirements with tailored efforts to educate audiologists regarding audiology-specific applications of federal privacy and security regulations. Unintentional breaches or compromises of patient's PHI, resulting from lack of proper education or training, can have dire consequences for both patients and providers. The enhancement of HIPAA training strategies, therefore, is essential to ensuring the privacy and security of patients' PHI in audiology clinics and facilities.

Conclusion

The results of the initial online questionnaire, which yielded responses from 66 Ohio audiologists, revealed that only slightly more than half reported that education and training regarding HIPAA regulations is provided annually in their work environments. The results of the subsequently administered discussion questions, which were completed by seven Ohio audiologists, revealed that the majority of surveyed audiologists reported that annual HIPAA training is required in their employment settings. Though the discussion question responses are more promising, the combined results of the initial

online questionnaire and subsequent discussion questions reveal that a significant number of audiologists do not currently receive the federally required annual HIPAA refresher training. These findings indicate the need for increased emphasis on the importance of compliance with HIPAA training requirements, as failure to comply can result in legal consequences for healthcare facilities.

Only approximately half of participating audiologists indicated that they felt as though HIPAA training should be required annually. Several respondents indicated that they felt as though HIPAA training should only be required when modifications or updates to the regulations occur. This finding suggests that some audiologists do not currently see the value and/or importance of annual refresher courses. The results also revealed several common themes surrounding audiologists' opinions regarding the training protocols that are currently utilized in their employment settings. Several audiologists indicated that they felt as though currently utilized HIPAA training strategies are both lengthy and tedious, which can lead to inattention, disinterest, and disregard for the material being covered. The need for and significance of interactive, engaging HIPAA training programs cannot be overemphasized. Training programs must clearly illustrate the goals of HIPAA regulations and why they are relevant and essential to everyday professional practices and duties. By engaging audiologists in training programs that validate their role as healthcare providers and emphasize the importance of

compliance with federal privacy and security regulations, their motivation to gain a stronger understanding of HIPAA requirements will likely increase.

In order to increase audiologists' knowledge and understanding of the application of HIPAA regulations to their practices as auditory and vestibular healthcare professionals, the incorporation of tailored training efforts should be strongly considered in audiology facilities. Periodic audiology-specific educational seminars can facilitate opportunities for discussion amongst colleagues regarding current issues in the facility. Furthermore, they can provide the opportunity to address any questions or concerns that audiologists may have regarding the implementation of HIPAA regulations in their workplace. The incorporation of case studies and/or hypothetical patient scenarios may be helpful in illustrating federal privacy and security regulations, as well as their relevance to daily audiology practices. Written materials should also be used to supplement in-person training efforts, so as to ensure that audiologists can easily access and reference the information provided to them in the future.

The majority of surveyed audiologists reported they did not complete any coursework during graduate school regarding HIPAA statutes and regulations. Approximately half of the survey respondents indicated that they have been employed as professionally licensed audiologists for a minimum of sixteen years. Therefore, the overall lack of graduate school HIPAA training or coursework that was reported in the current study may be partially attributable to the number of years that respondents have

been employed as licensed audiologists. As HIPAA and HITECH were initially enacted in 1996 and 2009, respectively, some respondents were already licensed audiologists and thus would not have completed HIPAA coursework during their graduate studies. However, it would be highly beneficial for current graduate programs to include coursework regarding HIPAA rules and regulations in their academic curriculum. This could be accomplished through a one-day seminar or short-term course, and would be helpful in introducing audiology students to federal privacy and security requirements. It would also be a valuable tool in establishing a foundation of HIPAA awareness and knowledge, which can lead to increased understanding of and compliance with the regulations. Graduate programs can play an important role in educating students regarding HIPAA statutes and their implications for clinical practices. By introducing HIPAA to audiology students, future audiologists may have a stronger understanding of federally established privacy and security regulations.

The ultimate goal of HIPAA privacy and security regulations surrounds the safeguarding of PHI. In order to be both effective and compelling, training programs must emphasize the purpose/s of HIPAA and their implications for interactions with patients. Audiologists must have a firm understanding of the rules and regulations in order to ensure their compliance with them. Furthermore, their comprehension of HIPAA rules is critical to maintaining the privacy and security of patients' PHI. Therefore, the

development and implementation of valuable, engaging HIPAA training and educational programs should be prioritized in healthcare facilities.

Training programs that incorporate opportunities for active participation, feedback and/or questions, and discussion are increasingly likely to engage and motivate healthcare providers. When coupled with periodic audiology-specific educational seminars or courses, the importance of compliance with federal privacy and security regulations can be even further emphasized. The protection of patients' health information is critical to establishing trust and maintaining confidence in the services provided by audiologists. Every effort must thus be made to educate and motivate audiologists regarding compliance with HIPAA regulations through both initial and refresher training courses. By enhancing training protocols and educational strategies, audiologists can gain the tools necessary to ensure the protection of their patients and safeguarding of their health information.

References

American Academy of Audiology (AAA). (2009). Code of Ethics. Retrieved from Http://www.audiology.org/publications-resources/document-library/code-ethics

Bendix, J. (2013). HIPAA: How to protect yourself and your practice. *Medical Economics, 90*(15), 38-41.

Blair, R. (2003). HIPAA training comes of age. *Health Management Technology, 24*(7), 30-33.

Bradley, J.S., Apfel, M., & Gover, B.N. (2009). Some spatial and temporal effects on the speech privacy of meeting rooms. *Journal of the Acoustical Society of America, 125*(5), 3038- 3051.

Brown, C. (2005). HIPAA programs: Design and implementation. *Information Systems Security, 14*(1), 10-20.

Callas, E., & Brockmeier, K. (2001). HIPAA compliance readiness assessment: A case study. *Journal of the Healthcare Financial Management Association, 55*(10), 40-44.

Cavitt, K. (2012, October). Compliance, legalities, and ethics in audiology today. Audiology Online. Transcript obtained from http://www.audiologyonline.com/ articles/compliance-legalities-and-ethics-in-6968

Clamp, P.J., Grant, D.G., Zapala, D.A., & Hawkins, D.B. (2011). How private is your consultation? Acoustic and audiological measures of speech privacy in the otolaryngology clinic. *European Archives of Otorhinolaryngology*, *268*, 143-146.

Denton, D.R., & Gladstone, V.S. (2005). Ethical and legal issues related to telepractice. *Seminars in Hearing, 26*(1), 43-52.

Dunlap, E.F., & Frigy, R.L. (2013, May-June). The wait is over: The HIPAA final rule has arrived. *Journal of Healthcare Compliance, 15*(3), 5-10.

Grossman, C. (2014). Playing Russian roulette: The impact of HIPAA and HITECH on healthcare data governance. *Health Management Technology, 35*(9), 26-27.

Having, K. & Davis, D.C. (2005). HIPAA compliance in U.S. hospitals: A self-report of progress toward the security rule. *Perspectives in Health Information Management, 2*(9), 1-11.

Hayden, J.R. (2013, March-April). Health plans and HIPAA privacy and security. *Journal of Healthcare Compliance, 15*(2), 45-46, 58-59.

Health Insurance Portability and Accountability Act of 1996 (HIPAA). Public Law 104-191, 110 Stat. 1936 (Aug. 21, 1996). Available at http://www.hhs.gov/ocr/hipaa/

Horner, J., & Wheeler, M. (2005). HIPAA: Impact on clinical practice. *The ASHA Leader*, 11-23.

Jacob, D. (2002). How to comply with HIPAA: A practical guide for hearing healthcare professionals. *The Hearing Journal, 55*(9), 36-39.

Jacob, D. (2003). Ten steps to HIPAA compliance. *The Hearing Journal, 56*(2), 24-26.

Johnson, L.M., & Schulte, J.D. (2004). Job: security. 7 steps for HIPAA compliance. *Healthcare Financial Management, 58*(100), 46-49.

Jones, E.B., Swain, M.J., Patel, V., & Furukawa, M.F. (2014). Supporting HITECH implementation and assessing lessons for the future: The role of program evaluation. *Healthcare, 2*, 4-8.

Kaplowitz, M.D., Hadlock, T.D., and Levine, R. (2004). A comparison of web and mail survey response rates. *Public Opinion Quarterly, 68*(1), 94-101.

Kittleson, M.J, & Brown, S.L. (2005). E-mail versus web survey response rates among healthcare professionals. *American Journal of Health Studies, 20*(1), 7-14.

Lesiecki, W. (2003). Having HIPAA headaches? There's software that can help. *The Hearing Journal, 56*(7), 42-47.

Lewis, M. (2013, June). 7 compliance measures for new HIPAA rules. *Medical Economics, 90*(12), 41-42.

Li, J., & Shaw, M.J. (2008). Electronic medical records, HIPAA, and patient privacy. *International Journal of Information Security and Privacy, 2*(3), 45-54.

Lo, B., Dornbrand, L. & Nubler, N.N. (2005). HIPAA and patient care: The role for professional judgment. *Journal of the American Medical Association, 293*(14), 1766-1771.

Longenecker, C., & Abernathy, R. (2013). The eight imperatives of effective adult learning. *Human Resource Management International Digest, 21*(7), 30-33.

Mavis, B.E., & Brocato, J.J. (1998). Postal surveys versus electronic mail surveys. *Evaluation and the Health Professions, 98*(21), 395-408.

Palacios-González, C. (2014). The ethics of clinical photography and social media. *Medicine, Healthcare, and Philosophy: A European Journal, 18*(1), 63-70.

Porter, S.R., & Whitcomb, M.E. (2003). The impact of contact type on web survey response rates. *Public Opinion Quarterly, 67*(4), 579-588.

Romanow, K. (2010, July 6). The impact of recent HIPAA changes. *The ASHA Leader*, *15*(3), 3.

Sanna, M. (2014). Take action to avoid the most common HIPAA violations. *The AmericanChiropractor, 36*(6), 16-19.

Shaw, G. (2013). HIPAA compliances holds key to keeping patient data safe. *The Hearing Journal*, *66*(3), 28-30.

Sterling, R. (2015, September 15). How to defend your practice against HIPAA violations. *Ophthalmology Times, 40*(15), 72-73, 75.

Strauss, L.J. (2012). Compliant HIPAA training: Where to begin? *Journal of Healthcare Compliance, 14*(6), 55-61.

Strauss, L.J. (2013, July-August). Direct from the office for civil rights: A HITECH/HIPAA regulatory update. *Journal of Health Care Compliance, 15*(4), 61-62,71.

The Office of the National Coordinator for Health Information Technology. (2012). Guide to privacy and security of health information (Version 1.1). United States

Department of Health and Human Services. Washington, DC: U.S. Government Printing Office.

U.S. Department of Health and Human Services. (2013, January 25). Modifications to the HIPAA privacy, security, enforcement, and breach notification rules under the health information technology for economic and clinical health act and the genetic information nondiscrimination act; Other modifications to the HIPAA rules; Final rule. *Federal Register, 78*(17), 5565-5702.

U.S. Department of Health & Human Services. (2003, April 14). Privacy rule: Standards for privacy of individually identifiable health information. *45 Code of Federal Regulations, Parts 160 and 164.* Available at http://www.hhs.gov/ocr/hipaa [cited as CFR].

U.S. Department of Health & Human Services. (2000). Standards for privacy of individually identifiable health information (final rule). *Federal Register, 65*(250), 82461-82829. Available at http://www.gpoaccess.gov/index.html.

Zapala, D.A., & Hawkins, D.B. (2008). Hearing loss and speech privacy in the healthcare setting: A case study. *Journal of the American Academy of Audiology, 19*(3), 215-225.

Appendix A: Survey Recruitment E-mail

Dear Ohio Audiologist,

My name is Anne Antalovich and I am currently a third year doctoral audiology student at The Ohio State University. I am writing to invite to participate you in my research study that is part of my Capstone project. The purpose of the study is to examine the knowledge possessed by audiologists regarding the Health Insurance Portability and Accountability Act (HIPAA) of 1996 and subsequent modifications to the federal statute, particularly focusing on the Privacy and Security Rules. Furthermore, the study will aim to identify sources of training and/or education received by audiologists regarding HIPAA rules and regulations. This survey has been determined exempt from Institutional Review Board (IRB) review.

I am inviting to participate in this study because your practice is listed on the American Academy of Audiology, the American Speech-Language-Hearing Association, and/or the Ohio Academy of Audiology's website of providers, all of which are available for public viewing.

Your participation is voluntary. If you agree to participate, please click on the link below and provide answers to each question on the brief survey. The survey should take approximately 15- 20 minutes to complete. Please answer the questions honestly and truthfully. If you choose not to participate, please disregard this e-mail. A reminder e-mail will be sent to you in two weeks regarding participation in the survey. After this time, no further contact will be attempted.

We will work to make sure that no one sees your online responses without approval. But, because we are using the Internet, there is a chance that someone could access your online responses without permission. In some cases, this information could be used to identify you. For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not a part of the research of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678- 6251.

To participate, please click here: https://www.surveyplanet.com/54a819e1b3fa3ffe08a91573.

Thank you for your time.

Sincerely,

Anne Antalovich	Dr. Gail Whitelaw
Co-Investigator	Principal Investigator

Appendix B: Survey Reminder E-mail

Dear Ohio Audiologist,

My name is Anne Antalovich and I am currently a third year doctoral audiology student at The Ohio State University. An e-mail was sent to you two weeks regarding an invitation to participate in my research study that is part of my Capstone project. I am writing as a reminder of the invitation to participate in my research study. The purpose of the study is to examine the knowledge possessed by audiologists regarding the Health Insurance Portability and Accountability Act (HIPAA) of 1996 and subsequent modifications to the federal statute, particularly focusing on the Privacy and Security Rules. Furthermore, the study will aim to identify sources of training and/or education received by audiologists regarding HIPAA rules and regulations. This survey has been determined exempt from Institutional Review Board (IRB) review.

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We will work to make sure that no one sees your online responses without approval. But, because we are using the Internet, there is a chance that someone could access your online responses without permission. In some cases, this information could be used to identify you. For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not a part of the research of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678- 6251.

To participate, please click here: https://www.surveyplanet.com/54a819e1b3fa3ffe08a91573.

Thank you for your time.

Sincerely,

Anne Antalovich	Dr. Gail Whitelaw
Co-Investigator	Principal Investigator

Appendix C: Online Survey Questionnaire

Demographic Information

1. Please identify your primary work environment.
    a. Ear, Nose, and Throat (ENT) practice
    b. Private Practice
    c. Hospital
    d. Speech and Hearing Clinic
    e. Veterans Affairs Medical Center
    f. University
    g. Other

2. Please indicate the highest degree you have obtained to date:
    a. Master's Degree (M.A./M.S.)
    b. Doctor of Audiology (Au.D.)
    c. Doctor of Philosophy (Ph.D.)
    d. Other

3. Please indicate the year in which you obtained your highest degree to date.
    a. Box for typing

4. How many classes did your graduate program provide regarding the federal statutes established by the Health Insurance Portability and Accountability Act of 1996?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4

5. Please indicate the amount of time you have been employed as a professionally licensed audiologist.
    a. Less than 12 months
    b. One to five years
    c. Six to ten years
    d. Ten to fifteen years
    e. Sixteen to twenty years
    f. More than twenty years

Federal Privacy and Security Statutes

6. What was the purpose of the Health Insurance Portability and Accountability (HIPAA) of 1996?
    a. To improve individual and group access to healthcare
    b. To reduce the misuse of health information, insurance, and health care services
    c. To reduce the cost of health care insurance and services
    d. To protect the privacy and security of health information
    e. A & D
    f. **A, B, & D**

g. All of the above

7. The Privacy and Security Rules are included under which title of HIPAA?
    a. Title I: Health Insurance Reform
    b. **Title II: Administrative Simplification**
    c. Title III: Tax Related Health Provisions
    d. Title IV: Application and Enforcement of Group Health Plan Requirements
    e. Title V: Revenue Offsets

8. Which statement best describes the HIPAA Privacy Rule?
    a. **Features a set of national standards that focus on the use and disclosure of protected health information (PHI) by covered entities**
    b. Features a set of national standards that focus on the use and disclosure of written and oral protected health information (PHI) and de-identified protected health information by covered entities
    c. Features a set of national standards to safeguard the electronic generation, storage, use, and transmission of protected health information
    d. Features a set of national standards to safeguard the electronic, written, and oral generation, storage, use, and transmission of protected health information and de-identified protected health information by covered entities

9. Which statement best describes the HIPAA Security Rule?
    a. Features a set of national standards that focus on the use and disclosure of protected health information (PHI) by covered entities
    b. Features a set of national standards that focus on the use and disclosure of written and oral protected health information (PHI) and de-identified protected health information by covered entities
    c. **Features a set of national standards to safeguard the electronic generation, storage, use, and transmission of protected health information**
    d. Features a set of national standards to safeguard the electronic, written, and oral generation, storage, use, and transmission of protected health information and de-indentified protected health information by covered entities

10. Which of the following is considered a covered entity under HIPAA regulations?
    a. Attorneys
    b. Health care plans (e.g. Aetna or Aflac)
    c. Accounting firms
    d. Audiology Clinic
    e. **B & D**
    f. All of the above

11. Who is responsible for enforcing the HIPAA Privacy and Security Rules, as well as civil penalties associated with breaches of these rules?
    a. The U.S. Department of Justice
    b. Center on Medical Record Rights and Privacy
    c. The Office of the National Coordinator for Health Information Technology

d. **The Office of Civil Rights**

12. True/False: HIPAA rules and regulations only apply to protected health information.
    a. **True**
    b. False

13. Which HIPAA rule/s outline the national regulations to protect individuals' electronic health information?
    a. The HIPAA Privacy Rule
    b. The HIPAA Security Rule
    c. The HIPAA Technology Rule
    d. **A & B**
    e. All of the above

14. Which of the following safeguards does the HIPAA Security Rule require?
    a. Administrative, organizational, physical
    b. **Administrative, physical, technical**
    c. Physical, electronic, facilitative
    d. Electronic, procedural, physical

15. The HIPAA Privacy Rule does not apply to health care providers who do **not** have electronic health records.
    a. True
    b. **False**

16. The Security Rule applies to protected health information that is transmitted _____.
    a. Orally
    b. **Electronically**
    c. In Writing
    d. All of the above

17. True/False: Under the HIPAA Privacy Rule, covered entities are only required provide patients with a Notice of Privacy Practices at the initial visit.
    a. **True**
    b. False

18. Which of the following is an example of a **physical** safeguard required by the HIPAA Security Rule?
    a. Staff training to establish knowledge and compliance with HIPAA security regulations and procedures
    b. Controls on access to electronic health records
    c. **Workstation use policies to ensure proper access to and use of workstations**
    d. Designation of a security officer

19. True/False: Not all individually identifiable health information (IIHI), such as that which is found in educational or employment records, is considered protected health information.
    a. **True**
    b. False

20. Which of the following may be considered protected health information?
    a. Audiograms
    b. License plate number
    c. Tattoos
    d. **All of the above**

21. True/False: "De-identification" of protected health information can be successfully accomplished by removing the patient's name, address and social security from their health records.
    a. True
    b. **False**

22. Which of the following is **not** considered a permitted disclosure of protected health information?
    a. Fraud and compliance programs
    b. Receiving payment for healthcare services
    c. **Providing information to an employer (e.g. pre-employment physical)**
    d. Use of the information is authorized by the patient

23. How do you report a breach of the HIPAA Privacy or Security Rules?
    a. Report the incident to your HIPAA Privacy or Security Officer
    b. Inform your supervisor
    c. File a HIPAA report or complaint
    d. **All of the above**

24. Violations of HIPAA rules and regulations are punishable by:
    a. Criminal penalties
    b. Civil penalties
    c. **A & B**

25. What does the acronym HITECH stand for?
    a. Healthcare Initiative for the Treatment and Ethical Consideration of Humans Act
    b. **Health Information Technology for Economic and Clinical Health Act**
    c. Health Information Technology for Effective Clinical Healthcare Act
    d. Health Information Training for Ethical Clinical Healthcare Act

26. What is the purpose of the HITECH Act of 2009?
    a. Legislation focused on the increased privacy and security of protection health information
    b. Legislation to address and ensure the continuity of health care coverage
    c. Legislation to improve the use of medicals savings accounts
    d. Legislation to address breaches of protected health information
    e. **A and D**
    f. B and C
    g. A, C, and D
    h. All of the above

27. According to HITECH, when must patients be informed of a security breach?

a. When the protected health information is secured by encryption technology
b. Within 30 days of discovering the breach
c. **When the protected health information is not secured by encryption technology**
d. B and C
e. All of the above

Education and Training

28. In your primary work environment, how often is education and training regarding HIPAA regulations provided?
    a. Upon hiring
    b. Less than once a year
    c. Once a year or more
    d. Never

29. Identify the type/s of training and education provided regarding federal statues on the privacy and security of protected health information? (Please select as many responses as apply).
    a. Online informational coursework or modules
    b. In class informational seminar/s or coursework
    c. Written materials (including handbook and handouts)
    d. Quizzes or tests of knowledge
    e. Other
    f. None

30. Which statement best describes your level of confidence regarding your knowledge and understanding of current HIPAA regulations and rules?
    a. I am very confident in my knowledge and understanding of current HIPPA statutes and regulations.
    b. I am somewhat confident in my knowledge and understanding of current HIPPA statutes and regulations.
    c. I am neither confident nor unconfident in my knowledge and understanding of current HIPPA statutes and regulations.
    d. I am unconfident in my knowledge and understanding of current HIPPA statutes and regulations.
    e. I am very unconfident in my knowledge and understanding of current HIPPA statutes and regulations.

Appendix D: Focus Group Recruitment E-mail

Dear Ohio Audiologist,

My name is Anne Antalovich and I am currently a fourth year doctoral audiology student at The Ohio State University. I am writing to invite you to participate in my research study that is part of my Capstone project. The purpose of the study is to examine the knowledge possessed by audiologists regarding the Health Insurance Portability and Accountability Act (HIPAA) of 1996 and subsequent modifications to the federal statute, particularly focusing on the Privacy and Security Rules. Furthermore, the study will aim to identify sources of training and/or education received by audiologists regarding HIPAA rules and regulations. This study has been determined exempt from Institutional Review Board (IRB) review.

An online survey was created and utilized to assess Ohio audiologists' knowledge of HIPAA regulations and identify currently utilized training and education strategies in clinical audiological facilities. The information from this survey has been collected, tabulated, and analyzed. I am writing to invite you to participate in a focus group aimed to identify the training and enforcement of HIPAA statutes and regulations in your current employment setting. This focus group will also aim to develop strategies to improve and enhance HIPAA training efforts and protocols in clinical audiological facilities.

I am inviting to participate in this study because your practice is listed on the American Academy of Audiology, the American Speech-Language-Hearing Association, and/or the Ohio Academy of Audiology's website of providers, all of which are available for public viewing.

Your participation is voluntary. If you agree to participate, the focus group will meet one time for a maximum of sixty minutes. The focus group will be meet on Sunday, October 4th from 1:00 - 2:00 p.m. in Columbus, Ohio at Panera Bread, located at 880 West 3rd Avenue, Columbus, Ohio 43212. If you choose not to participate, please disregard this e-mail. A reminder e-mail will be sent to you in one week regarding participation in the focus group. After this time, no further contact will be attempted.

The information you provide will be published anonymously. For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not a part of the research of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.

To participate, please reply to this e-mail to confirm your interest in participating in the focus group.

Thank you for your time.

Sincerely,

Anne Antalovich	Dr. Gail Whitelaw
Co-Investigator	Principal Investigator

Appendix E: Focus Group Reminder E-mail

Dear Ohio Audiologist,

My name is Anne Antalovich and I am currently a fourth year doctoral audiology student at The Ohio State University. An e-mail was sent to you one week ago regarding an invitation to participate in my research study that is part of my Capstone project. I am writing as a reminder to invite you to participate in my research study. The purpose of the study is to examine the knowledge possessed by audiologists regarding the Health Insurance Portability and Accountability Act (HIPAA) of 1996 and subsequent modifications to the federal statute, particularly focusing on the Privacy and Security Rules. Furthermore, the study will aim to identify sources of training and/or education received by audiologists regarding HIPAA rules and regulations. This study has been determined exempt from Institutional Review Board (IRB) review.

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To participate, please reply to this e-mail to confirm your interest in participating in the focus group.

Thank you for your time.

Sincerely,

Anne Antalovich	Dr. Gail Whitelaw
Co-Investigator	Principal Investigator

Appendix F: Focus Group Discussion Questions

Instructions: The purpose of these questions is to identify the current HIPAA training/education methods utilized in your employment setting/s and develop various strategies to improve and enhance HIPAA training efforts in clinical audiological facilities. The information you provide will be collected and published anonymously in a study designed to investigate the knowledge possessed by professionally licensed audiologists regarding the Health Insurance Portability and Accountability Act of 1996 (HIPAA) and its implications for clinical audiological practices. We request that you answer the following questions honestly and truthfully. You are not required to provide an answer to each question and you may withdraw your participation at any time. The information and feedback you provide today will be published anonymously. Thank you for your participation!

Discussion Questions

1. What training protocols and strategies does your workplace currently utilize regarding the federal statutes and regulations established by HIPAA?

2. How effective do you feel these training strategies and protocols have been in your education and understanding of HIPAA regulations?

3. Does your workplace provide continuing education regarding HIPAA statues and modifications to those statues? If so, what methods of continuing education are utilized (i.e. written materials, in-person training classes, etc.)?

4. What educational strategies or methods do you think would be beneficial in improving audiologists' knowledge and understanding of HIPAA statues and regulations?

5. How often do you feel as though audiologists should be required to participate in HIPAA educational training (i.e. annually, every other year, etc.)?

6. Additional comments/questions regarding currently utilized HIPAA training strategies or methods for improving audiologists' knowledge and understanding of HIPAA regulations?